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RECORD

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HOUSES **SEPTEMBER 1948**

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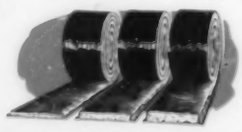

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ARCHITECTURAL

RECORD

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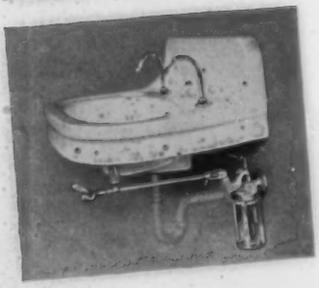

M-184 Knee-operated dispenser, for installation on lavatories. Delivers measured quantity of soap when knee-fork is pressed in.

M-1030 Portable floor-type foot-operated dispenser. Delivers measured quantity of soap when treadle is pressed. Telescoping spouts swing horizontally.

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THE RECORD REPORTS

Housing Left as Campaign Issue as Congress Scorns Public Housing Parts of T-E-W Bill· Construction Peak Forecast Despite High Costs

Talk of current inflationary conditions and warning of depression to follow fairly monopolized the special session of Congress. Nettled by the President's interruption of their vacation and campaigning plans, members were disposed only to give the Administration some firm credit controls: powers to regulate installment buying. Many GOP leaders were heard to complain that Mr. Truman had failed to use laws for money control which were already on the books. They begrudged the granting of any additional control powers.

Housing, as a contemplated long range federal program, fell by the wayside in all the midsummer release of oratory on Capitol Hill, but on the last day of the brief session a modified housing bill containing no provisions for slum clearance or public housing was pushed through.

The construction industry as a whole was neither too surprised nor in any way sorry that Congress failed to approve the comprehensive program pushed by the public housers, favored generally by labor and some veteran groups, and requested specifically by the President in his message.

From the opening of the "extraordinary" session there were clear indications that no major steps would be taken toward approving all of President Truman's anti-inflation program. As an example, the Republican policy statement said: "Serious legislative problems cannot be satisfactorily handled in the midst of a political campaign." Objections were immediately raised with the contention that the Administration sought, through its anti-inflation proposals, to control individual Americans. Again the Republican statement expressed it: "The President would fix wages, fix prices, expand government spending, increase federal taxes, socialize and nationalize medicine and generally regiment the life of every family, as well as agriculture, labor and industry, and his proposals would create an annual budget which could not be less than $60 billion which would make inflation inevitable and permanent."

T-E-W Bill Loses Out

Against this background of enmity it was acknowledged that housing and other construction bills which sought heavy expenditure through grants could not be passed.

If, indeed, the broad housing program as expressed in the Taft-Ellender-Wagner measure, had any chance at all of getting through the special session, this slim line of hope was entirely lost when Sen. Taft abandoned his own bill temporarily, saying it wasn't needed now, promising to push enactment next year. This change of attitude on the part of the Senate's Republican leader was touched off by arrival on Capitol Hill of the President's midyear economic report. This report and an accompanying message again warned of dangerous inflation and certain economic relapse if inflation curbs were not voted.

Sen. Taft immediately played Mr. Truman's own report against the White House demands for action on housing. He quoted the President's economic advisers as saying: "Residential construction is expected to increase the total supply of dwelling units by more than a million during 1948. This high output has been accompanied by an increase in costs that is outrunning consumers' ability to pay for the housing they need." This Taft construed as ample proof that further legislative aids in 1948 for the Administration to apply in a booming economy would only add to what he called the very serious inflation. In short, he concluded the Truman message removed the T-E-W bill from any emergency status.

Modified Housing Bill Passed

The housing bill that finally was passed is intended primarily to spur private building of low-cost homes and apartments by increasing loan and mortgage guarantees. Specifically, it:

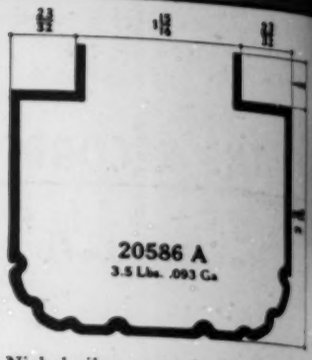
1. Increases insurance authorization for rental housing under Title VI, Section 608, by $800 million, half of it outright and half subject to release by the President, and extends this authorization to March 30, 1949.
2. Raises the maximum loan per unit to $8100.
3. Extends Section 609 to include interim financing of prefabricated homes and providing insurance of loans to prefabricators.
4. Provides insurance of loans for sale of Greenbelt towns.
5. Provides insurance of construction loans on projects of 25 or more single family units up to 80 per cent of their value.
6. Increases mortgage limits for owner-occupant 25-year loans to 90 per cent up to $7000 of value and 90 per cent of first $7000 and 80 per cent of excess up to $11,000 of value.
7. Provides insurance of 95 per cent loans for home owners of moderate income, and 90 per cent loans for rental housing in the low-income brackets.
8. Increases Title I authorization by $35 million and raises the limit on Class 3 from $3000 to $4500.
9. Makes available a $50 million revolving fund through RFC for loans to prefabricators and large scale builders.

Other provisions of the bill clarify

(*Continued on page 10*)

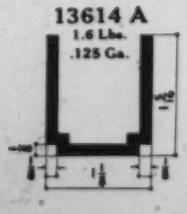
"Next time I want an architect who can design me a study that cannot be turned into a guest room!"

— Drawn for the RECORD *by Alan Dunn*



Nickel silver extrusions from Anaconda die 20586A form mullions extending from floor to top of glass facade at either side of doors.

Nickel silver extrusion from Anaconda die 4591K is employed in door frames.



Bronze columns for the screen above are formed of extrusion from Anaconda die 6518A, and muntins retaining the glass are bronze extrusions from die 13614A.

Bronze and Nickel Silver

accent I. Magnin Stores in California

NICKEL SILVER in combination with bronze provides striking beauty and lasting dignity in the new I. Magnin Stores in Beverly Hills, Los Angeles and San Francisco.

Illustrated on these pages are views of the Beverly Hills Store, exemplifying the treatment worked out for all ornamental metal work in all three stores by the late Timothy L. Pflueger, Architect. Exterior work for this store was executed by A. J. Bayer Company, interior by Cochran-Izant Co. The general contractor was The William Simpson Construction Company.

Entrance trim, doors, show window framing and handrail and balustrade shown in front and rear entrances above are of extruded nickel silver. Base mouldings are of nickel silver sheet.

Nickel silver extrusion from Anaconda die 21354A forms handrail over nickel silver balustrade at rear entrance.

At left, screens on the first floor are formed of glass panes in extruded architectural bronze frames, while showcases and shadow boxes (display cases let into wall at left) are also executed in extruded bronze.

On the second floor, extruded nickel silver shapes were used in the base moulding around the entire floor, in the display cases, mirror trim and in framing glass screens and archways between departments.

Such ingenious use of bronze and nickel silver forms a lasting tribute to the artistry of both architect and fabricators. Their selection of Anaconda Architectural Shapes for their work is a tribute not merely to the Anaconda reputation for quality and uniformity, but to the variety of shapes and quantities that are readily available.

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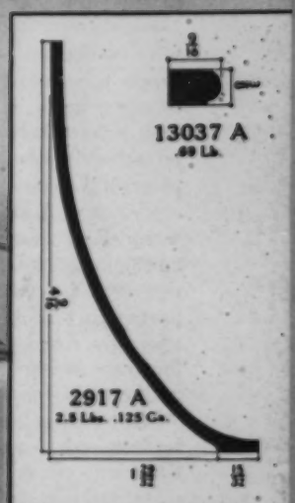
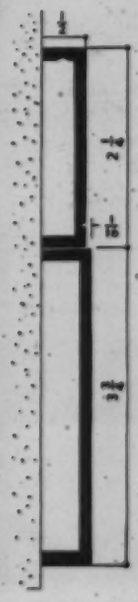


Display case frames are nickel silver and include extrusions from Anaconda dies 2917A and 13037A.

Base mouldings are built up of nickel silver extrusions from Anaconda dies 3650K and 7976K.



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THE RECORD REPORTS

(*Continued from page 7*)

the secondary mortgage market act passed last June, authorize HHFA to undertake technical research and study toward the standardization of building codes and materials, and provides FHA with a revolving fund of $1 billion for yield insurance.

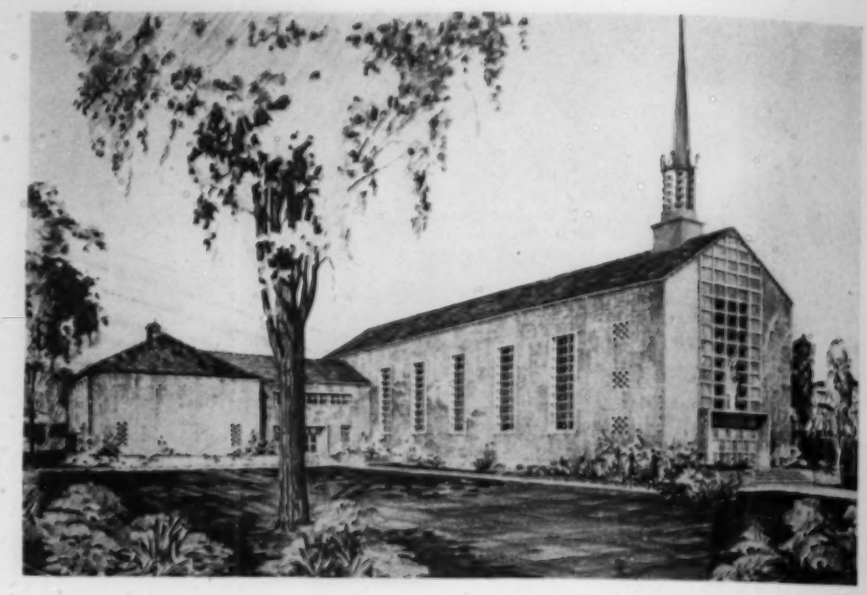
Advisers Analyze Report

While the fight over the T-E-W bill was raging in both houses not much was said about a warning from the Economic Advisory Council that new housing might price itself out of the market "in a few years at most," if the current high cost trend continued. The midyear report told Congressmen the average cost of new homes had increased 20 per cent over the past 12 months. At the same time, it indicated, average family income after taxes rose 8 per cent.

Highlighted in the advisers' analysis were estimates that builders would supply the country with over one million dwelling units in 1948. This coincides with private industry forecasts. It must be stated, however, that the one-million-plus total looked for this year will include new housing created through remodeling. Some 450,000 new homes and apartment units were started in the first six months of 1948. The economists said this high rate of home construction could be supported, perhaps for years to come, by the basic needs of an increasing population.

"But only a few years at most would be required to saturate the demand of those who can acquire houses at current costs, and that saturation would portend a serious downswing in residential construction."

(*Continued on page 12*)



Lawrence Park Community Church, Toronto. Design calls for "L" shaped structure comprising one-story nave, two-story Sunday School, and one-story auditorium. Award has been made for Sunday School. Gordon S. Adamson, M.R.A.I.C., Architect

NEWS FROM CANADA

By John Caulfield Smith

Slum Clearance Started

Toronto's Regent Park slum clearance and redevelopment project has been given the green light. Work is to commence immediately on construction of 56 dwelling units, consisting of a 48 suite apartment block and a group of eight single family houses. Rentals will start at $15 for a family of ten having an income of $80 per month.

Regent Park will be Canada's first openly subsidized housing project. The Dominion Government has agreed to pay half the cost of acquiring and clearing the site for an eventual 1056 units. All other costs must be borne by the city, with the possible assistance of the province. To what extent the latter will help is unknown. It's true that the Ontario government *has* contributed towards the cost of the first 56 units, but it is silent on the subject of future appropriations.

Actually, rising building costs make provincial grants almost a necessity if Regent Park is to be carried to completion. Without them, the subsidy burden will severely tax the city's resources. When the project was approved by

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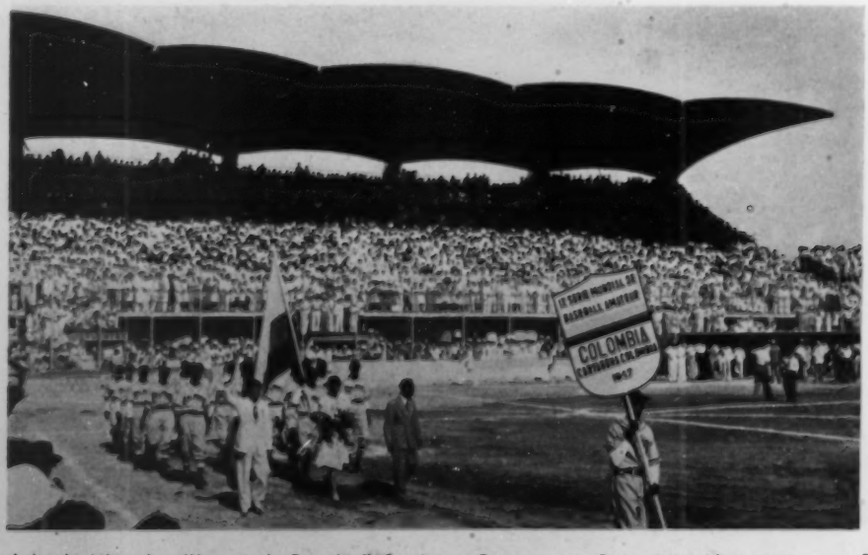

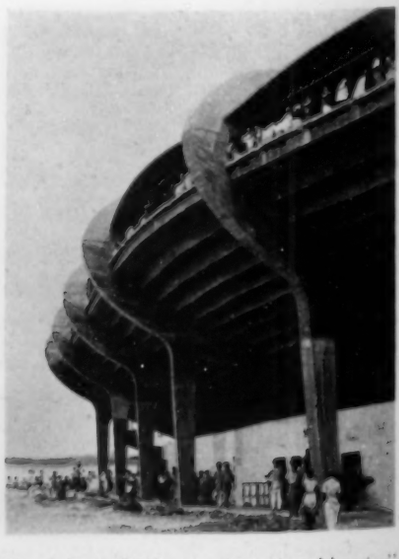

A lively "live load" crowds Baseball Stadium, Cartagena, Colombia, (ARCHITECTURAL RECORD, July, '48) for amateur "world series"

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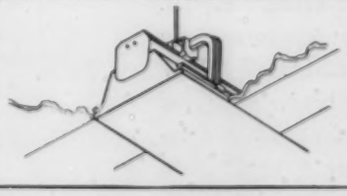

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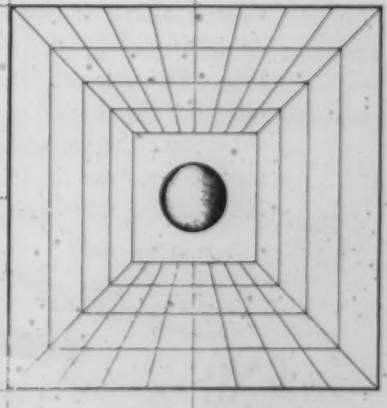

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5

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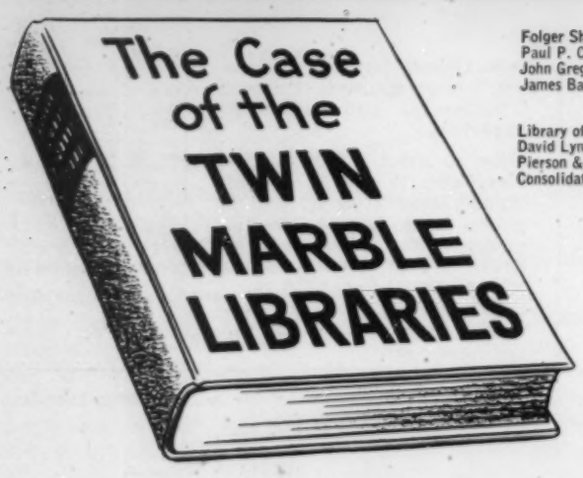

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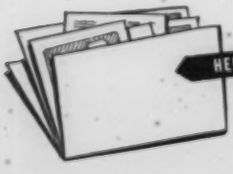

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THE RECORD REPORTS

(*Continued from page 10*)

Construction Peak Forecast

Even as Congress prepared to wind up its short midsummer stand, the Departments of Commerce and Labor announced that by the best reckoning of their experts the construction industry is heading for an $18 billion business in 1948. This was based on anticipated new construction activity over the 12 months.

Industry spokesmen — builders and lenders — likewise predicted that new construction would touch this peak easily this year. They went a step further, claiming that the addition of repair and maintenance expenditures would push this figure over the $20 billion mark.

Costs Remain High

But construction costs remained high along with commodity prices. Commerce and Labor estimated the cost of an average new home or factory built in this year would run from 10 to 15 per cent higher than the same type of project a year ago. Ever-rising labor and material costs combined to bring less construction for more money.

Home builders are expected to erect 950,000 homes in 1948, spending $7,100 million to do it. In 1947 the industry turned out 846,600 privately-financed units at a total cost of $5,260 million. In spite of these inflationary trends, however, builders say costs are stabilizing; they look for no marked changes during the balance of 1948. Some of the reasons for this outlook are the technological advances in building methods, increased labor productivity, and a more even flow of essential building materials to the site.

This industry prediction was fairly well in line with the government outlook expressed in the Commerce and Labor findings. The federal statisticians based their estimates for 1948 on three major assumptions, significant as third-quarter bell-wethers: (1) that expenditures for national defense will proceed substantially in accordance with programs which already have been approved; (2) that no general business recession will occur in 1948; and (3) that the current gradual upward trend in construction costs will continue throughout the year with perhaps some quickening in the latter half due to the latest round of increases in basic steel prices, and that during 1948 as a whole costs will average between 10 and 15 per cent more than they did in 1947.

One of the strong contributing factors to these increasing costs in building was

(*Continued on page 14*)

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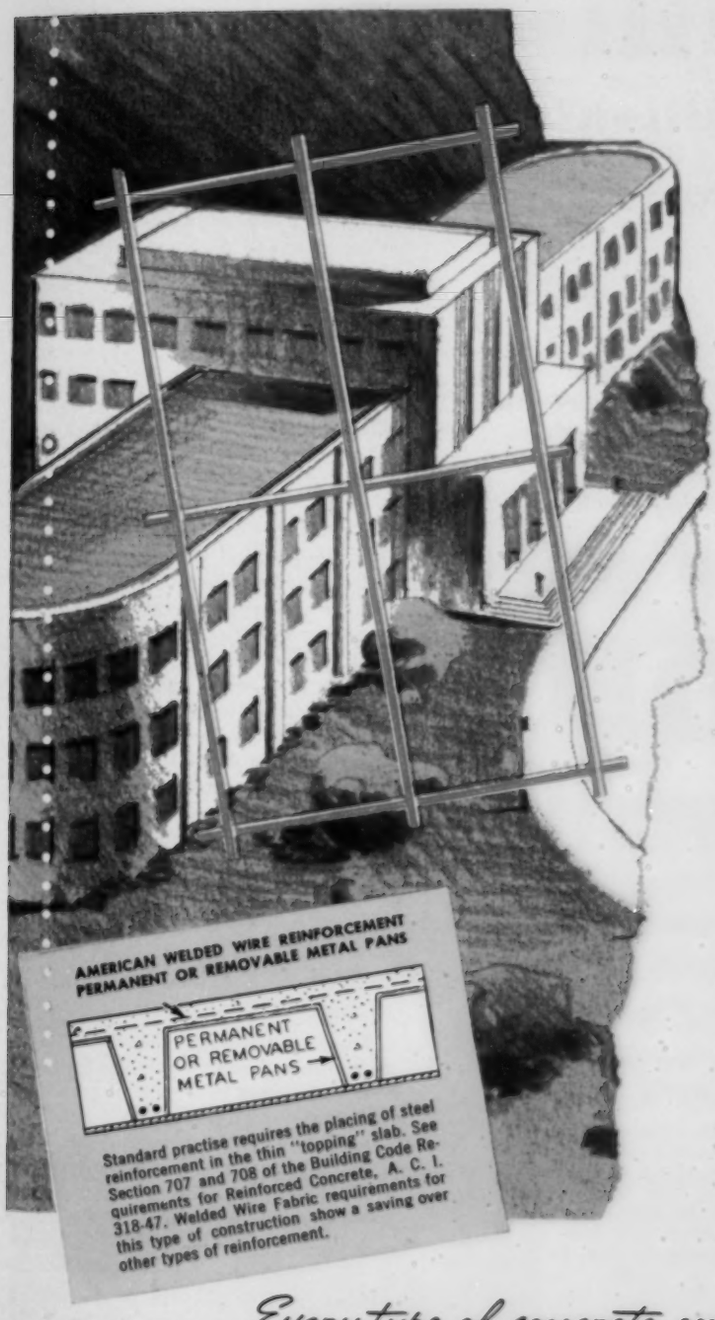
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PERMANENT OR REMOVABLE METAL PANS
PERMANENT OR REMOVABLE METAL PANS
Standard practise requires the placing of steel reinforcement in the thin "topping" slab. See Section 707 and 708 of the Building Code Requirements for Reinforced Concrete, A. C. I. 318-47. Welded Wire Fabric requirements for this type of construction show a saving over other types of reinforcement.

YOU can save material cost and construction time by reinforcing "ribbed floor" or "pan and joist" construction with American Welded Wire Fabric.

This type of construction — widely used throughout the country in office, hotel, apartment and school buildings — consists of closely spaced, comparatively shallow joists, supporting a relatively thin top slab, as shown in the accompanying sketch.

U·S·S American Welded Wire Fabric is the ideal reinforcement for this type of construction. Its many closely spaced, cold drawn, high yield-point wires, with welded cross members, distribute any unusual concentrated load that might occur between joists. Welded Wire Fabric can be quickly and easily installed, for the wide rolls cover many panels with flat, continuous reinforcement.

Stock styles of American Welded Wire Fabric provide efficient and economical reinforcement for a wide variety of concrete structures. When you specify Wire Fabric reinforcement you can find out just the proper style and weight you can use to best advantage by getting in touch with the nearest American Welded Wire Fabric sales office.

AMERICAN STEEL & WIRE COMPANY, GENERAL OFFICES: CLEVELAND, OHIO
COLUMBIA STEEL COMPANY, SAN FRANCISCO
PACIFIC COAST DISTRIBUTORS
TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM
SOUTHERN DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

Every type of concrete construction needs

AMERICAN WELDED WIRE FABRIC
reinforcement

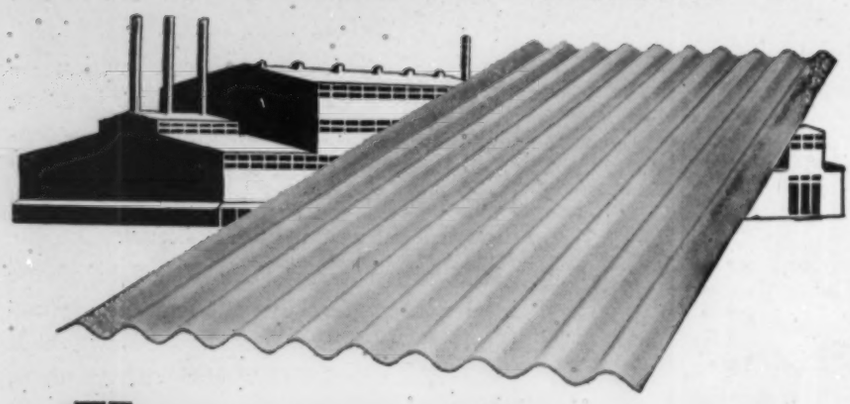
USS

UNITED STATES STEEL

Planning a

Chemical Plant Oil Refinery Paper Mill?

...or an addition?



You can now get ASBESTONE

Asbestos-Cement Corrugated Roofing & Siding

—the lifetime roofing and siding that's fireproof and corrosion-proof. Asbestone can't be damaged by weather, rats, or termites. No painting. No upkeep.

Here are a few of the many prominent users:

LONE STAR CEMENT CORP.
CALIFORNIA OIL CO.
CHAMPION PAPER and FIBRE CO.
ETHYL CORPORATION
FREEPORT SULPHUR CO.
NEW ORLEANS PUBLIC SERVICE
MOBILE PAPER MILL CO.
CROSBY CHEMICALS, INC.
STANDARD OIL OF N. J.
UNIVERSAL ATLAS CEMENT CO.

Why we can assure you early delivery

We are concentrating on production of this single industrial product. Stocks are now ample to make some immediate shipments. Free Engineering Service, available on request, shows how Asbestone can be adapted to your needs.

ASBESTONE CORPORATION

8300 TCHOUPITOULAS STREET NEW ORLEANS 15, LA.

Specialists in Asbestos-Cement Building Products for over 25 Years

THE RECORD REPORTS

(*Continued from page 12*)

the combined 25 per cent so-called emergency rise in freight rates. The Interstate Commerce Commission recently ordered these temporary increases made permanent. All construction materials handled by railroads, domestic water carriers and freight forwarders were affected. Brick was a notable exception in the final temporary-to-permanent adjustment, with transportation charges lowered as much as three cents per 100 pounds. Most freight charges on building materials climbed in the intricate shifting of rates which, on the final accounting, show an overall advance in the nation's freight bill of $1,535 million. This refers to all freight shipments, not just building materials.

There was promise of thorough Congressional investigation of another government-ordered move on the part of material manufacturers. This was the changeover from the long established basing point pricing system to the f.o.b. mill method of quotation. Applied first by cement manufacturers as a result of the Supreme Court decision earlier this year, the practice was soon adopted by steel producers. The practice of dropping freight absorption schedules injected confusion into the buying patterns of most builders.

Now a special senate committee, headed by Senator Capehart of Indiana, is setting out to learn what impact the Supreme Court decision will have on the country's competitive price structure. Legislation drafts recommending changes on the basis of the committee's findings can be expected by the time the 81st Congress convenes in January. Construction interest will be represented directly on an advisory council of 25, named to assist this committee.

"Fannie Mae" Explained

The Reconstruction Finance Corporation, with its lending authority increased by $500 million to a total of $2 billion, has issued a circular explaining purchase of Federal Housing Administration-insured mortgages by its subsidiary, Federal National Mortgage Association. FNMA (or Fannie Mae as the trade calls it) was given by the second session of the 80th Congress a capital of $20 million, plus a surplus of $1 million subscribed by the parent agency, RFC, which may be expanded through the issuance of securities or notes up to $840 million.

RFC outlined the following provisions, negatively itemized, covering FNMA operations under the housing measure approved July 1:

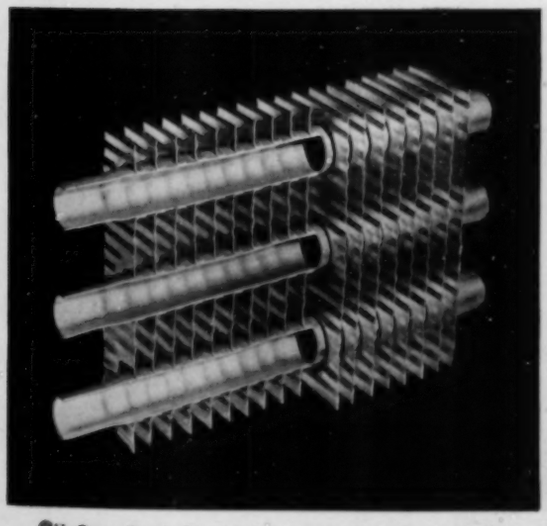
(*Continued on page 16*)

SFC=+HTE*

* Spun Fin Collars Mean Increased Heat Transfer Efficiency

Spun from the metal itself, McQuay Fin Collars provide extra areas of contact and bonding with the tubes.

HOW McQuay INSURES GREATER METAL-TO-METAL CONTACT AREA...



McQuay Ripple Fin units feature one piece fins rippled to parallel the airflow, spun fin collars to provide more metal-to-metal bonding, and tubes rippled by hydraulic pressure to insure greater turbulence within.

Important to heat transfer efficiency is metal-to-metal contact. Important in McQuay's ripple-fin, ripple-tube construction in assuring a greater metal contact area are the spun fin collars into which tubes are expanded. Spun fin collars are exclusively McQuay. As fins are pressed, small holes are punched in the metal. In these openings, a specially hardened high speed steel spinner goes to work, spinning out the adjacent metal into a strong, smooth, precision sized "collar" with a mirror-like surface. A tight, positive bond between fins and tubes is effected by hydraulic pressure which tension-seals each collar to each tube without the use of low conductivity metals or alloys. Get full information on McQuay heat transfer equipment from your nearest representative or McQuay, Inc., 1605 Broadway N.E., Minneapolis.

McQuay INC.

HEATING • AIR CONDITIONING • REFRIGERATION

A New Star IS BORN
NORTH STAR by SMITHCRAFT
● North Star, the newest fixture in the Smithcraft fluorescent line, heralds the coming of a new era in fixture design. Slim and simple in appearance, giving an unprecedented degree of illumination in the vital working zone, this two lamp, 40-watt unit achieves lighting output never before obtained in a unit of the conventional type. North Star has every desired maintenance and service feature, including hinged glass panels and a fully enclosed dustproof top. North Star is ideal for offices, stores or institutions. For information, address Dept. 500
Smithcraft
LIGHTING DIVISION
CHELSEA 50, MASSACHUSETTS
In Canada, address inquiries to:
LIGHTING AND LAMPS LTD., 425 RIVER ST., MONTREAL, QUEBEC

THE RECORD REPORTS

(*Continued from page 14*)

1. No mortgage shall be offered to the Association if it covers property held by federal, state or municipal instrumentalities.

2. No mortgage may be purchased for an amount exceeding the unpaid principal balance thereof, plus accrued interest at the time of purchase.

3. No mortgage shall be offered to the Association for purchase if the original principal obligation of the loan exceeds or exceeded $10,000 for each family residence or dwelling unit covered by the mortgage.

4. No mortgage shall be offered to the Association for purchase unless offered by the original mortgagee prior to any other sale thereof.

5. No mortgage shall be purchased by the Association unless the mortgagee certifies that the housing with respect to which the mortgage was made meets the construction standards prescribed for insurance of mortgages on the same class of housing under the National Housing Act as amended.

6. No mortgage shall be offered to the Association for purchase by any one mortgage (a) unless such mortgage is secured by property used, or designed to be used, for residential purposes, and (b) if the unpaid principal balance thereof, when added to the aggregate amount paid for all mortgages purchased by the Association from such mortgagee pursuant to authority contained in the legislation, exceeds 25 per cent of the original principal amount of all mortgages made by such mortgagee which meet the requirements of the Act.

The above outline is important in stating specifically the field in which Fannie Mae will operate under the new housing law passed by the regular session the middle of this year.

The Veterans Administration had not yet issued its own set of regulations covering activity in the secondary mortgage field at the time this was written.

ECA Lumber Screened

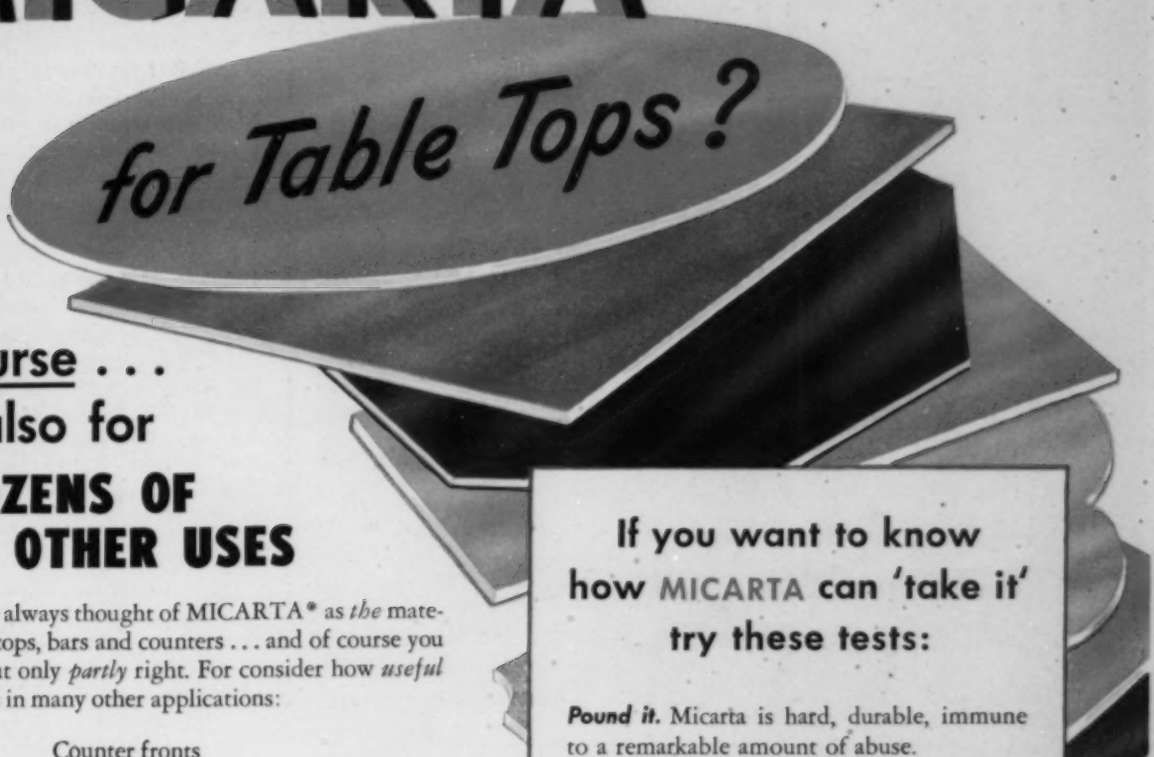
As the Economic Cooperation Administration got under way, lumber and wood products were not among the heavy early allocations for shipment to Europe. They were under consideration, however, for later periods. First shipments went mainly for relief of hunger and suffering and to break critical production bottlenecks. To assure effective use of lumber materials a difficult screening job was necessary.

In some instances, requirements submitted by foreign governments were not

(*Continued on page 18*)

MICARTA

for Table Tops?



of course . . . and also for DOZENS OF OTHER USES

Maybe you've always thought of MICARTA* as *the* material for table tops, bars and counters . . . and of course you were right, but only *partly* right. For consider how *useful* MICARTA is in many other applications:

Counter fronts
Kick plates
Push plates
Wainscots
Walls
Partitions

to name only a few.

MICARTA is a highly decorative plastic laminate *building* material. It's made in three types: Micarta Sheet, 1/16" thick; MICARTABORD, 5/32" thick for wall applications; and Micarta laminate, 7/8" and 1¼" thick, for counters, bars and table tops.

MICARTA color is inherent. Sheets are available up to 4' x 8'. Two types of finish — either high polish or satin — and twenty-one colors and types to choose from, including decorator colors, pastels, linens, mother of pearl, foam and natural wood laminates, protected by a surface of melamine resin. Micarta is obtainable in two grades: "Standard" and "cigarette proof."

If you want to know how MICARTA can 'take it' try these tests:

Pound it. Micarta is hard, durable, immune to a remarkable amount of abuse.

Spill cocktails on it. Micarta is highly resistant to spilled foods, alcohol, grease, mild acids and alkalis.

Burn cigarettes on it. Micarta resists heat, doesn't develop 'rings' nor white spots. Micarta is obtainable in "standard" and also in "cigarette proof" grade.

Kick it. In kick plates, Micarta stands scrapes, kicks and all-'round abuse that you'd think *ought* to cover it with mars and scratches.

Try YOUR ***particular tests.*** We'll gladly send you a sample of MICARTA that you can use and abuse to your heart's content. Just mail the coupon below.

Mail the coupon for free sample

Made by Westinghouse, distributed by

UNITED STATES PLYWOOD CORPORATION

New York 18, N. Y.

MICARTA

Weldwood* Hardwood Plywood
Douglas Fir Weldwood
Mengel Flush Doors
Douglas Fir Doors
Overhead Garage Doors
Molded Plywood
Armorply* (metal-faced plywood)
Tekwood* (paper-faced plywood)
*Reg. U. S. Pat. Off.

Flexmetl
Weldwood Glue* and other adhesives
Weldtex* (striated plywood)
Decorative Micarta**
Flexwood*
Flexglass*
Firzite*
**Reg. U. S. Pat. Off.
Westinghouse Electric Corp.

NO-OBLIGATION COUPON

United States Plywood Corporation
New York 18, N. Y.

I WANT TO GIVE MICARTA THE "THIRD DEGREE". Without any obligation whatever, send me, *free*, a sample of MICARTA so I can see for myself how beautiful, tough, wear-resisting and abuse-proof MICARTA really is.

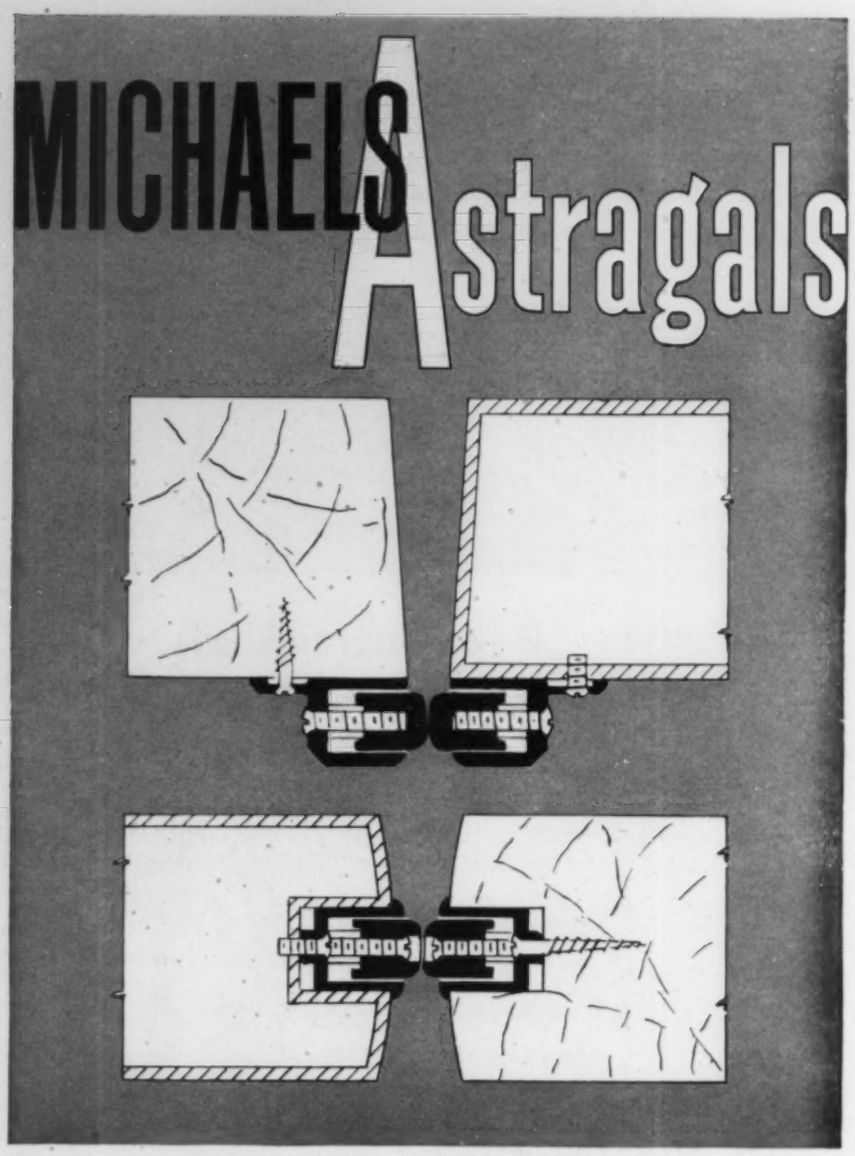
NAME _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

AR-98

MICHAELS Astragals



Write today for information and prices on Michaels Adjustable Astragals. Made of extruded bronze, aluminum or nickel, they are simple, practical, rugged, easily installed and adjusted, and available in several styles. Two are shown above. Type A (top illustration) may be applied to either wood or hollow metal bevel doors. Also used as a stop bead. Type E (lower illustration) is for bullnose hollow metal or wood double doors. Both types may be used at the bottom of doors. Michaels Astragals help keep doors closed tightly . . . eliminate drafts and air currents . . . keep out dirt and dust. Write for details. Astragals are only one of many items in the Michaels line. So whatever building product you need, if it's made of metal, we may have it or can make it.

MICHAELS PRODUCTS

Bank Screens and Partitions
Welded Bronze Doors
Elevator Doors
Store Fronts
Lettering
Check Desks (standing and wall)
Lamp Standards
Marquises
Tablets and Signs
Name Plates
Astragals (adjustable)
Stair Railings (cast and wrought)
Wrought and Cast Radiator Grilles
Grilles and Wickets
Kick and Push Plates
Push Bars
Cast Thresholds
Extruded Thresholds
MI-CO Parking Meters
Museum Trophy Cases

The MICHAELS ART BRONZE COMPANY, 234 Scott St., Covington, Ky.

Member of the National Association of Ornamental Nonferrous Metals Manufacturers

THE RECORD REPORTS

(*Continued from page 16*)

in sufficient detail so that final decisions on allocation of funds had to be delayed. ECA representatives went into the various European countries to help work out requirements for the 1948–49 year. Revision of earlier estimates is anticipated.

Export quotas for the third quarter of 1948 as announced by the U.S. Department of Commerce include 275 million board feet of lumber and in addition 20,000,000 square feet of plywood, 800,000 board feet of hardwood flooring, and 825,000 board feet of millwork. In the case of lumber, it should be noted that licenses for all clear grades of Douglas fir and western pines and all grades of ponderosa pine, western white pines and Port Oxford Cedar lumber are to be severely screened.

The general licensing procedure set up by Commerce permits export of certain classes of logs, lumber and wood manufactures without a specific export license. Normal procedure under ECA is for an exporter to obtain an order from an ERP country and then apply to the Commerce Department for an export license. Note that ECA will not decide which exporters are to do business with Europe nor will it decide which brands or makes of a product will be paid for with ECA funds. These decisions will be made by the European importer.

❖ ❖ ❖

ON THE CALENDAR

Sept. 5–11: National Home Week, featuring housing exhibits in cities throughout the country.

Sept. 13–14: 2nd Businessmen's Conference on Urban Problems, sponsored by the Construction and Civic Development Department and the Transportation and Communication Department of the Chamber of Commerce of the U. S., and the Detroit Board of Commerce; Detroit, Mich.

Sept. 17–Oct. 16: "The Modern House Comes Alive — 1948–9," exhibit of new ideas in architecture, home design, and integrating fine arts into interior design; Bertha Schaefer Gallery, 32 E. 57th St. New York 22, N. Y.

Sept. 24–Oct. 2: Nation-wide Fall Home Fashions Festival, sponsored by National Retail Furniture Assn.

Sept. 27–Oct. 1: 3rd National Plastics Exposition, Grand Central Palace, New York City.

Oct. 1–29: "Tomorrow's World — Work, Play and Live," exhibition sponsored by the New York Chapter, A.I.A.;

(*Continued on page 160*)

which means FLEUR-O-LIER *fixtures*

After you have your Lighting Plan, then comes the question: What lighting fixtures can be *depended upon* to provide the results called for by the Plan?

That's where Fleur-O-Lier fits into Planned Lighting, for since the very beginning of fluorescent lighting, Fleur-O-Lier fixtures have been *planned* lighting equipment. Here's the Fleur-O-Lier *plan:*

SPECIFICATIONS: rigid requirements devised by the best brains in lighting to insure proper quantity and distribution for ideal lighting performance . . . mechanical and electrical excellence.

TESTING: famous Electrical Testing Laboratories, Inc., examine Fleur-O-Lier units and "*certify*" as to their conformance to the specifications. This assures you that Fleur-O-Liers are *right* in lighting performance and in construction.

WIDE RANGE OF EQUIPMENT: twenty-five* of the oldest and best-regarded manufacturers make Fleur-O-Lier fixtures. Each must satisfy the high standards of the specifications but originality in design and in construction is not frozen.

Make Fleur-O-Lier equipment a specific part of your Lighting Plan. Then you'll be sure of full lighting performance, of easy maintenance, and of long, trouble-free operation.

**Participation in Fleur-O-Lier is open to anyone, consequently the number of participants constantly is changing.*

FLEUR·O·LIER

Manufacturers

2116 Keith Building • Cleveland 15, Ohio

Fleur-O-Lier is not the name of an individual manufacturer, but of a group of fixtures made by leading manufacturers. Participation in the Fleur-O-Lier program is open to any manufacturer who complies with Fleur-O-Lier requirements.

CONSTRUCTION COST INDEXES — Labor and Materials

United States average 1926—1929 = 100

Presented by Clyde Shute, manager, Statistical and Research Division, F. W. Dodge Corporation, from data compiled by E. H. Boeckh & Associates, Inc.

NEW YORK

Period	Residential Brick	Residential Frame	Apts., Hotels, Office Bldgs. Brick and Concr.	Commercial and Factory Buildings Brick and Concr.	Commercial and Factory Buildings Brick and Steel
1920	136.1	136.9	123.3	123.6	122.6
1925	121.5	122.8	111.4	113.3	110.3
1930	127.0	126.7	124.1	128.0	123.6
1935	93.8	91.3	104.7	108.5	105.5
1939	123.5	122.4	130.7	133.4	130.1
1940	126.3	125.1	132.2	135.1	131.4
1941	134.5	135.1	135.1	137.2	134.5
1942	139.1	140.7	137.9	139.3	137.1
1943	142.5	144.5	140.2	141.7	139.0
1944	153.1	154.3	149.6	152.6	149.6
1945	160.5	161.7	156.3	158.0	155.4
1946	181.8	182.4	177.2	179.0	174.8
Mar. 1948	244.8	246.4	233.9	237.0	229.9
Apr. 1948	248.6	250.7	235.9	238.5	232.1
May 1948	249.3	251.6	237.1	239.3	234.5
June 1948	249.5	251.8	237.4	239.5	234.7
	% increase over 1939				
June 1948	202.0	205.7	81.6	79.6	80.4

ATLANTA

Period	Residential Brick	Residential Frame	Apts., Hotels, Office Bldgs. Brick and Concr.	Commercial and Factory Buildings Brick and Concr.	Commercial and Factory Buildings Brick and Steel
1920	122.8	122.9	108.6	109.8	105.7
1925	86.4	85.0	88.6	92.5	83.4
1930	82.1	80.9	84.5	86.1	83.6
1935	72.3	67.9	84.0	87.1	85.1
1939	86.3	83.1	95.1	97.4	94.7
1940	91.0	89.0	96.9	98.5	97.5
1941	97.5	96.1	99.9	101.4	100.8
1942	102.8	102.5	104.4	104.9	105.1
1943	109.2	109.8	108.5	108.1	108.7
1944	123.2	124.5	117.3	117.2	118.2
1945	132.1	133.9	123.2	122.8	123.3
1946	148.1	149.2	136.8	136.4	135.1
Mar. 1948	194.6	198.7	172.4	172.9	174.0
Apr. 1948	196.2	199.7	173.6	175.3	175.3
May 1948	196.2	199.7	173.6	175.3	175.3
June 1948	196.4	199.9	173.9	175.5	175.5
	% increase over 1939				
June 1948	127.5	140.5	82.8	80.2	85.3

ST. LOUIS

Period	Residential Brick	Residential Frame	Apts., Hotels, Office Bldgs. Brick and Concr.	Commercial and Factory Buildings Brick and Concr.	Commercial and Factory Buildings Brick and Steel
1920	118.1	121.1	112.1	110.7	113.1
1925	118.6	118.4	116.3	118.1	114.4
1930	108.9	108.3	112.4	115.3	111.3
1935	95.1	90.1	104.1	108.3	105.4
1939	110.2	107.0	118.7	119.8	119.0
1940	112.6	110.1	119.3	120.3	119.4
1941	118.8	118.0	121.2	121.7	122.2
1942	124.5	123.3	126.9	128.6	126.9
1943	128.2	126.4	131.2	133.3	130.3
1944	138.4	138.4	135.7	136.7	136.6
1945	152.8	152.3	146.2	148.5	145.6
1946	167.1	167.4	159.1	161.1	158.1
Mar. 1948	223.6	227.5	200.2	202.9	201.3
Apr. 1948	223.8	227.5	200.6	203.0	201.5
May 1948	223.8	227.5	200.6	203.0	201.5
June 1948	230.0	234.2	208.7	210.7	209.0
	% increase over 1939				
June 1948	108.7	118.8	75.8	75.8	75.6

SAN FRANCISCO

Period	Residential Brick	Residential Frame	Apts., Hotels, Office Bldgs. Brick and Concr.	Commercial and Factory Buildings Brick and Concr.	Commercial and Factory Buildings Brick and Steel
1920	108.8	107.5	115.2	115.1	122.1
1925	91.0	86.5	99.5	102.1	98.0
1930	90.8	86.8	100.4	104.9	100.4
1935	89.5	84.5	96.4	103.7	99.7
1939	105.6	99.3	117.4	121.9	116.5
1940	106.4	101.2	116.3	120.1	115.5
1941	116.3	112.9	120.5	123.4	124.3
1942	123.6	120.1	127.5	129.3	130.8
1943	131.3	127.7	133.2	136.6	136.3
1944	139.4	137.1	139.4	142.0	142.4
1945	146.2	144.3	144.5	146.8	147.9
1946	159.7	157.5	157.9	159.3	160.0
Mar. 1948	214.0	211.7	201.9	209.1	204.1
Apr. 1948	214.9	212.7	202.7	209.5	204.4
May 1948	214.9	212.7	202.8	209.6	204.6
June 1948	215.6	213.6	202.9	209.7	204.8
	% increase over 1939				
June 1948	103.9	115.3	72.8	72.0	75.7

The index numbers shown are for combined material and labor costs. The indexes for each separate type of construction relate to the United States average for 1926–29 for that particular type — considered 100.

Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

index for city A = 110
index for city B = 95

(both indexes must be for the same type of construction).

Then: costs in A are approximately 16 per cent higher than in B.

$$\frac{110-95}{95} = 0.158$$

Conversely: costs in B are approximately 14 per cent lower than in A.

$$\frac{110-95}{110} = 0.136$$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926–29.

Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.

These index numbers will appear whenever changes are significant.

A Fixture... where Fixtures are needed

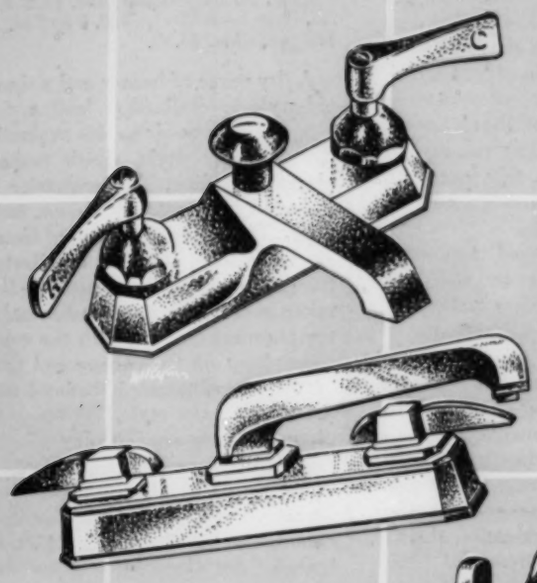
the Dependable Metals

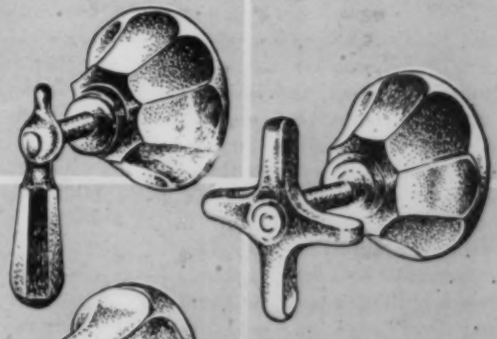
Brass and Bronze

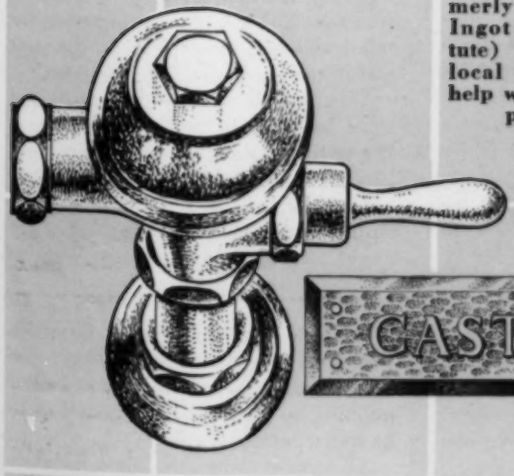
Defying corrosion and attracting the eye, cast brass and bronze are symbolic of inherent toughness and enduring beauty. Plain or plated, these metals are the fixed choice of designers everywhere when sound construction and attractive appearance are essential.

Engineers depend on these metals for high strength, corrosion resistance, excellent machinability at low cost . . . a host of engineering reasons. For many mechanical and chemical applications, nothing else will do the job so well as cast brass or bronze.

Your foundry can faithfully reproduce your ideas in these easily worked, traditional materials. Specify brass and bronze castings often . . . they are available *NOW!*



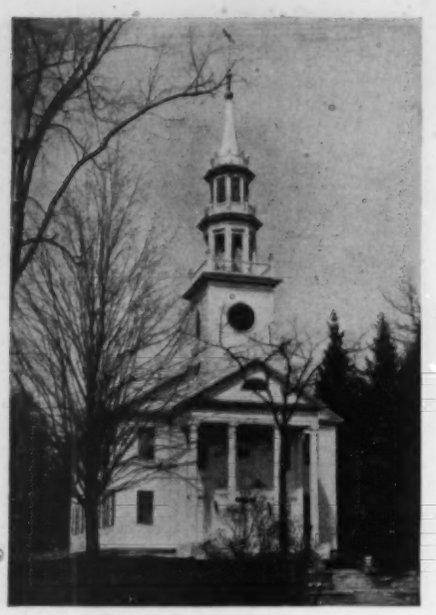




The Brass and Bronze Ingot Institute (formerly Non-Ferrous Ingot Metal Institute) suggests your local foundry for help with all casting problems.

CAST BRASS AND BRONZE

REQUIRED READING



Church of Christ, Congregational, Norfolk, Conn. From "Early Connecticut Meetinghouses." (Photo by J. Frederick Kelly)

CHURCHES WITH A HISTORY

Early Connecticut Meetinghouses: Being an Account of the Church Edifices Built before 1830, Based Chiefly upon Town and Parish Records. By J. Frederick Kelly. Columbia University Press (Morningside Heights, New York City), 1948. 2 volumes, boxed. 9 by 12 in. xlvii + 332 and xiv + 360 pp., illus. $40.00.

Those hardy souls who settled our New England shores were a fascinating lot. Individualists all, and insistent on their personal rights, they nonetheless had a community spirit so strong and vital that it ruled everything they did. Almost from the moment of their arrival on these shores they saw to it that each community had a place of public assembly — a meetinghouse — from which both their temporal and their spiritual lives were governed. Their whole history was irrevocably bound up with that simple and often exquisitely beautiful structure.

In these two handsome volumes, therefore, telling of all the activities and happenings revolving about the meetinghouses in the single state of Connecticut, a savory slice of early American history is presented. Buying a new bell, erecting a new spire, repairing the roof — all these were matters that the township was vitally interested in, and actively took part in. After the hearth came the meetinghouse in the life of a God-fearing man of the Colonies, and even a lusty Revolutionary saw to it that the local steeple never lacked fresh paint. All this is history, and much of it was buried in records moldy with age and forgotten.

Some idea of the magnitude of Mr. Kelly's labor in the preparation of these two volumes can be gleaned from a single paragraph of the foreword to Volume I: "The gathering of architectural data, including measuring and photography, has been done entirely by the author himself, as well as the preparation of all drawings for illustrations. Field work alone has involved more than 8000 miles travel by automobile throughout the state of Connecticut." This gargantuan task that Mr. Kelly set himself had the aim of making "as complete a record as possible of every existing church edifice in Connecticut built before 1830 which has architectural interest and to present in readily available form all that is known or can be learned regarding the earlier, now-vanished structures that preceded them." The group presented totals 87 buildings!

Mr. Kelly has arranged this vast amount of information in well-nigh perfect fashion. First comes a lengthy introduction giving the background of the meetinghouse — its function and use, its architectural development from the first crudely built log structures to the beautifully proportioned Post-Colonial edifices — and including a technical discussion of the existing buildings. Next, alphabetically arranged by the towns in which they are located, the 87 churches themselves are presented, each in a chapter by itself, with its history, technical description, plan and photographs of both exterior and interior. And lastly there is a detailed bibliography, followed by a most meticulous and scholarly index.

These are volumes which no architect, student or historian can afford to miss. Rife with anecdote, generous with quotation from old records, lavish with photos, plans and details, EARLY CONNECTICUT MEETINGHOUSES is as interesting as it is authoritative. Throughout its many pages it is a fine piece of work. Mr. Kelly is to be congratulated!

THE EFFECTS OF COLOR

An Introduction to Color. By Ralph M. Evans. John Wiley & Sons, Inc. (440 Fourth Ave., New York 16, N. Y.), 1948. 7¼ by 9½ in. x + 340 pp., illus. $6.00.

Here at last is a simple and complete discussion of color written in layman's language with no mathematical formulae to complicate matters. Prepared by the head of the Color Control Department of Eastman Kodak, and copiously illustrated (there are 15 color plates alone), it covers the subject thoroughly from the nature of light to the use of color in various fields.

Mr. Evans has divided his discussion into three sections — physics, psychophysics and psychology — so that any worker in color, regardless of his background, will be able to understand all three phases. No previous knowledge of the subject is presupposed.

Of particular interest to the architect will be the sections dealing with the effects of light on color, the measurement and specification of color, and the chapter on paints and pigments.

The volume is well indexed, and contains an excellent bibliography.

EVALUATION OF A STYLE

The Regency Style: 1800 to 1830. By Donald Pilcher. B. T. Batsford Ltd. (122 E. 55th St., New York City), 1948. 6 by 9 in. viii + 120 pp., illus. $4.50.

A dry sense of humor and a sly use of old-style capitalization lend a definite tongue-in-cheek air to this evaluation of the Regency style which makes for pleasant reading. The evaluation itself, however, is completely serious, and fair.

Mr. Pilcher has not limited himself to an essay on Regency architecture — though that is his main theme — but has taken in landscaping and town and country planning as well, with the emphasis throughout on the culture and thinking of the period which influenced the formulation of the style. "For a complete picture of any age," he says, "we must look to its journalism and to its popular literature, as well as to the more worthy literature which has survived, and in the case of the Regency this is particularly true, for the 'Gothic Romances' show us the extent to which aesthetic theory had been assimilated by the people who read them. Take, for example, such characters as Ethelinde (*The Recluse of the Lake*) who, 'Sitting down on a rustic and half ruined tomb . . . contemplated with mournful pleasure the Picturesque appearance it made adjoining the church,' or the character from *The Vicar of Lansdowne*, with his observation that 'the fine old ruin impresses the mind with the most pleasing, the most awful, the most soothing sensations.'"

Such novels were widely read, and their melancholy architecture became the vogue. Not, Mr. Pilcher points out, because of its architectural qualities but because of its literary ones. "This attitude," he comments, "was one which might have had more serious effects on architecture if a practical interpretation of it had been easier. As it was, the difficulties were considerable. For, from the literary point of view, the ideal house was, if not a complete ruin, at least a building so structurally unsound as to be quite uninhabitable."

All sorts of things, of course, had their effect on the architecture of the period: new materials, notably iron and glass; imperial expansion and foreign travel,

(*Continued on page 30*)

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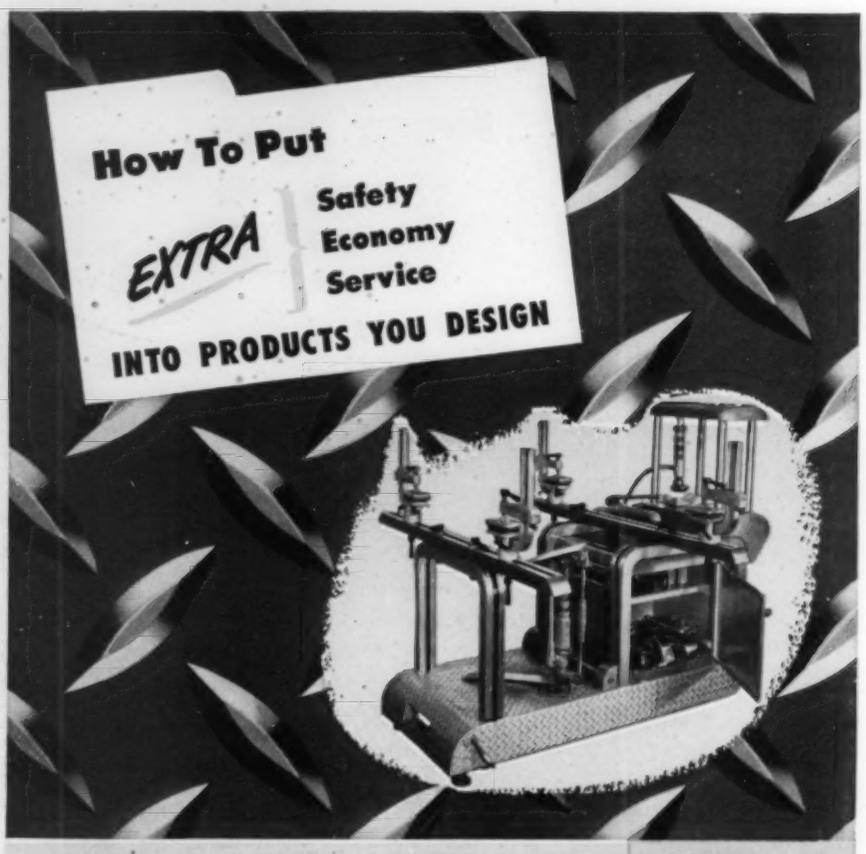

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REQUIRED READING

(*Continued from page 28*)

particularly in India and the Far East. Architects were expected to be, and were, ambidextrous, and "the men who expended so much effort in interpreting the Picturesque often gave the full measure of their approval to structures that were not Picturesque at all and to the many remarkable products of straight-forward engineering design."

As would be expected, most of Mr. Pilcher's book is taken up with the development of the Regency style and a discussion of what it was. (Strictly speaking, he says, there is no Regency Style.) But a splendid final chapter analyzes the contributions of the period and finds them considerable, particularly in town planning. Here is the kernel of the book, and here it is that the author's careful research and detailed study come to fruition. In this volume Mr. Pilcher has made an important contribution to the understanding of a difficult period in English architecture. He has, moreover, done it in highly interesting fashion. This is a book which should be and undoubtedly will be read for pleasure before it takes its rightful place on the reference shelf. Full of anecdote, containing many quotations and 130 illustrations, it has captured the very spirit of the era with which it is concerned.

MODERNIZATION SIMPLIFIED

Modernizing Old Houses. By Henry Lionel Williams and Ottalie K. Williams. Doubleday & Co. (14 W. 49th St., New York 20, N. Y.), 1948. 7 by 10 in. xiv + 270 pp., illus. $4.95.

For those who have in mind buying, restoring or repairing an old house where George Washington may or may not have slept, this book will be very useful. From a technical standpoint it is not a volume that the professional architect would need, but it contains many worthwhile suggestions for the modernization of old houses that might be helpful to him should he be called upon to handle a job of that kind. Furthermore, the many detail drawings and diagrams are clearly and simply presented and might well be handy for the architect to have as he explains proposed changes and improvements to his client.

There are chapters on weatherproofing and heatproofing the house, on humidity, heating, furnaces, radiators, modernizing old kitchen and bathrooms, on termites, fire hazards and well drilling. At times, however, the authors carry their enthusiasm for the "old-time atmosphere" to extremes: witness the "modern water closet in an old-fashioned guise," the unit being completely enclosed in rustic wood paneling.

ARCHITECTURAL

RECORD

WHO DESIGNS AMERICA'S HOUSES?

With a record-breaking quantity of new houses going up all over the country, in spite of high costs, it's natural to question standards of quality, both of design and of construction. Recent investigations have unearthed a few flagrant scandals of shoddy construction and of jerry building, but by and large the standard is probably no worse, structurally, than before the war, considering the green lumber cut to fill the huge immediate demand. But what of the quality of the design? Architects are certainly not responsible for poor construction since they do not supervise the building of the vast majority of the houses now going up (most of them for quick sale).

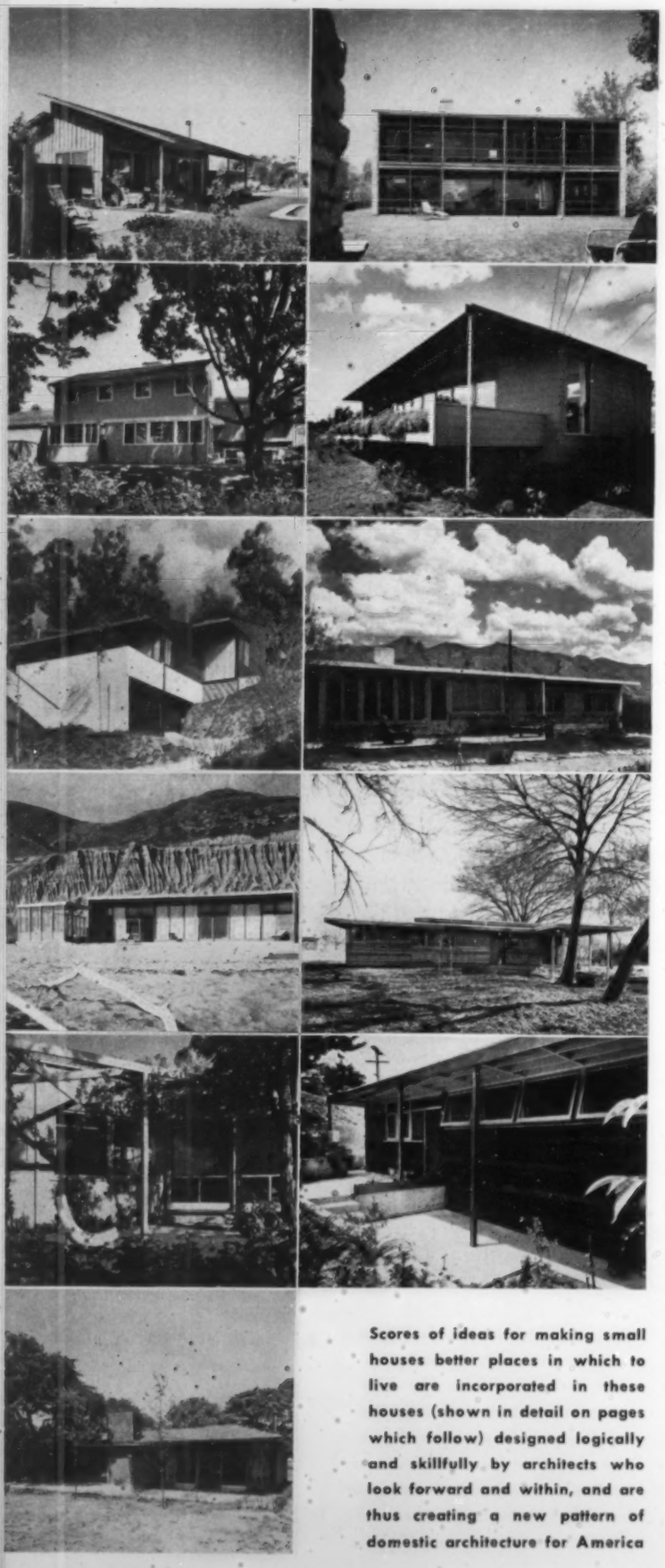
By the same token, architects would not be responsible for the design because most of the houses are being put up without the benefit of the architects' study and drawings. So directly architects are not responsible, and cannot be blamed for the poor plans, bad proportions, illogical detail, obsolete style clichés, that characterize most of today's new houses. But it's not so simple as that, and the architectural profession is decidedly responsible for house design — if indirectly and belatedly. For it was the architectural profession that set the pace, established the standards and popularized the "styles" that are now being imitated, mutilated, adapted and advertised. It is hard to deny that architects are responsible for the plethora of "authentic" Colonial, Cape Cod, Mt. Vernon, Georgian, Mediterranean, Normandy, Olde English half-timber-and-spalls, and all the rest. Shades of the eclectic past come back to haunt us now, distorted and debased, misshapen and grotesque to be sure, but still of recognizable parentage. The public accepted the architects' styles, period. And now we have another period of period styles, for the purveyors of houses naturally want to cash in on the accepted rather than plump for change and take the chance of public sales-resistance.

We must realize the ultimate architectural responsibility for the design of America's houses. The custom-designed house of the well-to-do today becomes the model for the imitators all down the line tomorrow. "Style seeps downward." So we may expect, in time, a pervading style based on the architects' efforts of today, even on the experimental houses of the present. Since both good and bad features of the architects' work seem to be copied indiscriminately, it behooves the profession to eliminate the less desirable features, the inept and the ugly, at the drawing-board stage and to emphasize the innovations that really contribute to greater convenience, livability, efficiency, economy and adaptability — to a better home environment for the American family. The responsibility for the design of America's houses still rests with the architects and the closer we can get to direct contact with the owners and builders of small houses, the greater will be the control and, we hope, the better the small house architecture of the nation. It is up to us.

Kenneth K. Stowell
EDITOR

HOUSES

MAIN ROADS



Scores of ideas for making small houses better places in which to live are incorporated in these houses (shown in detail on pages which follow) designed logically and skillfully by architects who look forward and within, and are thus creating a new pattern of domestic architecture for America

WHATEVER "housing" may mean to others, to many millions of American families it means a small, detached house on its own plot — to them the almost indispensable ingredient in any formula for a home. These families will be forced to rely indefinitely on the kind of housing that is offered them in the real estate pages of our Sunday newspapers unless the obligation of the architectural profession, implicit in its special skills and knowledge and in its pledge "to be of ever-increasing service to society," is more fully realized.

How architects might discharge this obligation without inviting personal bankruptcy — what some architects, and groups of architects, can do or are doing in an effort to be more effective in the small-house field — is the primary concern of this study.

Admittedly, a great number of architects will say frankly that they "cannot handle a house costing less than so-and-so many dollars" — usually quoting a figure just out of reach of the above-mentioned millions of families. This is a sincere and realistic declaration, implying no denial of the fact that it labels "untouchable" the great majority of the home-building public. One cannot blame the individual architect; yet, if the situation generally were to be left at that, we would have a condition of continuing stalemate in which, despite the vitality and achievements of contemporary architects, the practical procedures of the profession as a whole would have to be acknowledged as still too archaic to meet the opportunities and obligations of today.

There is mounting evidence that the architect can, by one means or another, be effective in the small house field; and that the comforts, convenience and security of good contemporary design will not indefinitely be the exclusive privilege of a comparatively few people. How long it may take to bring about this renovation seems to depend on two main factors: the development of practical techniques for dealing with the special problems involved in making professional design and services economically available to the small house field; and the

TO BETTER HOUSE ARCHITECTURE

By Arthur McK. Stires

formerly Architectural Editor of *House and Garden*

adoption of these methods by the profession on a scale which will constitute a national program rather than a series of local experiments.

At present there appear to be five main roads by which the architect may reach a wider house-building public directly. The architect may —

1. serve more individual clients through more efficient office and field methods;
2. undertake a program to serve more subdivision developers or operative-builders;
3. cooperate as designers and consultants with prefabricators or standard-house manufacturers;
4. offer design services to the public through stock plan selling or limited service, or both;
5. directly enter the field of house building.

We will consider each possibility briefly in turn.

First, the architect may serve more individual clients at a more reasonable fee by the reorganization of office and field procedures for time-saving efficiency, semi-standardization of details, modular design, simplification of specifications and records, and paring down overhead costs.

Second, he might more actively cooperate directly with operative-builders, saving in the design-cost-per-house by eliminating the repetition and duplication of time-consuming operations, by the elimination of 80% or more of the usual "conference-with-client" time, and by adopting the just-mentioned improvements in organization, standardization, and simplification.

Third, he might enter the field of prefabrication as a major (or minor) part of his practice. With only planning to do and the selection of few stock parts, the task of the architect would be simplified and time saved; but the public would probably do its own "synthetic design," selecting parts with the aid of the prefab dealer or salesman (which the architect might become). This selecting gives no scope to creative design, imagination or ingenuity — not a demanding or stimulating profession, hardly architecture. Most prefab companies have architects on their design staffs now, but there are, as yet, too few companies to make real opportunities for many architects in this branch of house-building.

Fourth, architects might contribute to small house design and building through selling duplicates of their designs, "stock plans" if you will, either (a) the outright final sale of sets of blueprints and specifications — no services, or (b) with necessary changes charged for on a time basis; and either (c) without inspection service, or (d) with inspection service (limited). This is usually a group enterprise undertaken for altruistic service reasons and sometimes to be merely self-liquidating rather than profit-making. But more about this later.

Fifth, actively enter the field of building houses from his own designs for sale to vindicate his contention that his is a better house than the usual speculative-builders produce, and to prove that the public will recognize its virtue and buy it, even at a premium if necessary. Here primary financing may prove a stumbling block for construction loan and mortgage money is traditionally a bit conservative, shall we say. The cost of designing would be just one item in the production cost of the house and the profit (or loss) would be on the total operation. The architect would demonstrate his ability to serve the small-house market directly as a "master-builder" but might lose his "professional" standing (even though he might increase his amateur standing as a builder). This will probably be rejected therefore by most architects as unprofessional.

Each of these five ways to better small housing has its active proponents. Perhaps each or all of these ways, or some combination, will have a place or places in the eventual solution of the problem; perhaps new ways will be found. One important point seems clear: the character of the small house supplied to the public by any and all of these professional activities is, in plan and design, a very long way ahead of what is offered by an operator-builder who retains no competent architectural services.

We say advisedly "a very long way ahead" — the time-lag between the professionally-designed house of demonstrated merit and its ultimate adoption, or "adaptation", by the operator-builder appears to be about twenty years. Even considering the house solely as an investment, it may be important to determine on which side of the ledger this 20-year item should be posted.

Of course, there are operators — especially the large-tract developers — who do retain architects; our second road or category. The cost of professional services is distributed thereby over a large number of units and becomes economically feasible. But the regrettable fact is that the developers' conception of what the public wants — i.e., what he believes he can most readily sell — is seldom consonant with what we would call the best contemporary design. Some of our largest developments are most disconcertingly and discouragingly full of inept anachronisms. The fact that they are presumably successful, from a financial standpoint, might be pointed out by the developer as confirmation of his judgment; but it does not prove that he might not be able to do as well for himself and much better for his customers and the community, if he allowed himself to be guided more by the best thinking in the architectural profession.

In case the operator-builder resists the architect because he thinks of him as a highbrow incapable of dealing with the realisms of the small home, it might be profitable for him to consider the war-industry housing problem of a few years ago, the solution of which was almost exclusively the work of architects, and which was an even more restricting and difficult bit of realism in its design aspects than is normally attempted by any builder. And, in passing, he might also recall that the most successful war housing communities were designed by men who are admittedly among our most brilliant contemporary architects. From which we might conclude that you don't have to be stupid to design a small house, and that perhaps it doesn't even help.

But even if the millennium has not yet arrived, and if the results of architect-developer collaboration still look as though the architect had somehow lost his voice, there are other possible ways of reaching the small house field. Let's take a look at the cooperative, or group practice, method, our fourth category.

In an effort to discover how much activity of this sort was going on, throughout the country, ARCHITECTURAL RECORD sent brief questionnaires to the Secretaries of all the A.I.A. Chapters. Three principal questions were asked: "At the present time does your chapter, or any organized group of registered architects in your area, conduct a small-house plan service of any

Shades of our architectural past haunt the real estate pages of the present to catch the period-minded buyer

kind?"; "Is such a service under consideration?"; "Has such a service been tried in the past and discontinued?". And "Why?".

Of the 47 responses received, 26 were completely negative — no such service existed, was contemplated, or had ever been tried. Of the remaining 21, 5 said that such a service was now operating, 8 more had a program under consideration, and another 8 reported that something of the sort had been tried and discontinued.

The questionnaires brought out some interesting pros and cons respecting the desirability of group efforts of this sort, and also some significant reasons for the demise of organizations which had, apparently, worked well and yet had been abandoned. Further on we shall have occasion to quote directly from these questionnaires; the various comments will be more readily appraised after a brief examination of the organization and methods of one or two of these cooperative services.

Take first the Architects Home Plan Institute of Minneapolis, Albert O. Larson, A.I.A., president. This organization succeeds an earlier one, started more than twenty years ago by other members of the Minnesota Chapter, and abandoned when official A.I.A. sponsorship was withdrawn — "leaving," as Mr. Larson says, "the small house field again wide open to the mercy of speculative builders, lumber yards and the magazines."

With the entire Chapter concurring in the belief that something should be done to give the small house owner the benefits of the best in architectural advice, a committee was appointed and promptly drafted a statement of the problem and the various courses of action suggested, and submitted this to all Chapter members for their study and remarks. The possible courses of action were essentially as follows:

1. No action; forget the small house client. Mr. Larson says, "We believed that such a course would be side-stepping our duty as a profession, unfair to young and future architects, unfair to a large clientele desiring our services and unfair to the community in which these houses are to be built."

2. Each architect to find a way to take any small house commission offered him, possibly making arrangements to farm the job out to another architect, with the client's approval, if he couldn't handle it himself; or turning it over to one of his draftsmen. Of this last suggestion Mr. Larson says, ". . . it has the fault that often times the fee is cut and the draftsman becomes a competitor of other practicing architects with their higher overhead . . . the client feels less secure. . . ."

3. Offer a stock plan service which will not lose money for the architects but which will give the small house client the benefit of architectural services at a price he can afford to pay. The Chapter decided to endorse and sponsor this course of action, and the Committee's report was approved by the Directors on March 1, 1945.

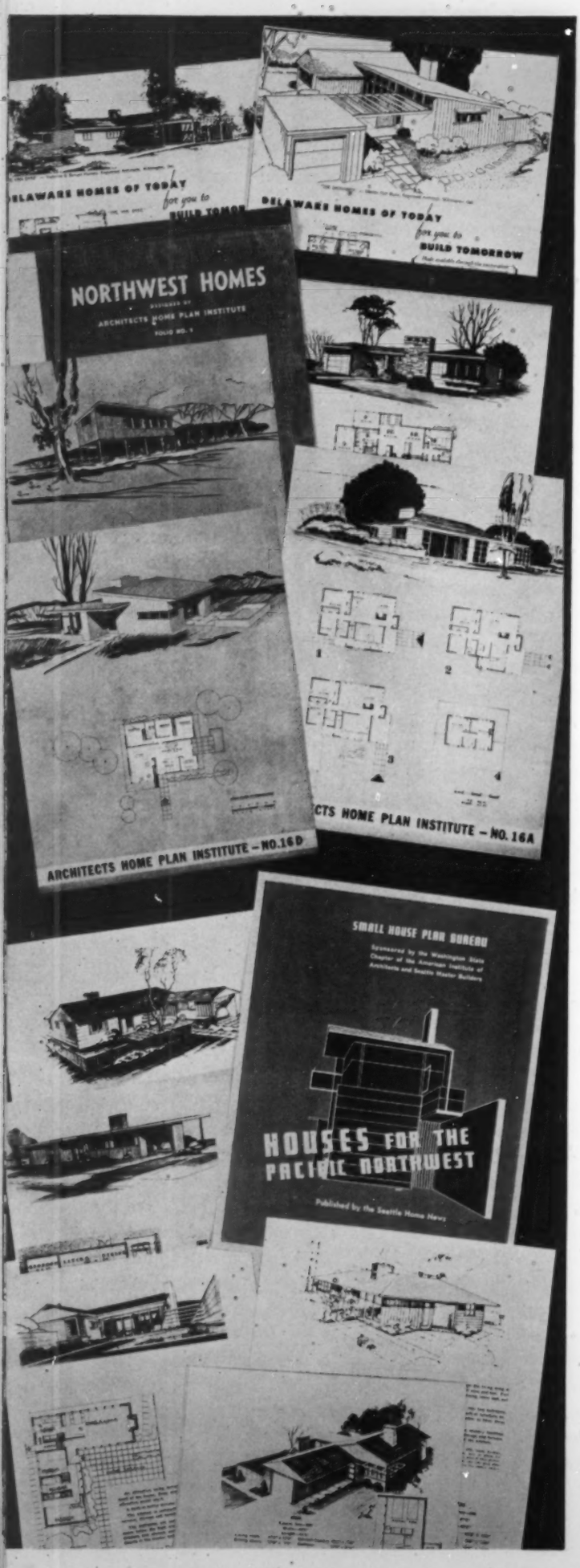
The membership of the Minneapolis Architects Home Plan Institute now comprises 25 architects, all A.I.A. members, each of whom has complied with the following conditions: he has paid a small entrance fee; he has furnished the Institute three designs, approved by a design committee; he has had the drawings photostated with a sufficient number of copies to give each member a copy of each design. Plans may be sold only by members.

To date, plans and specifications have been sold to 957 prospective home owners in 20 states. Two books of plans have been published under the title "Northwest Homes," and sell for $1.50 in department stores, banks and some retail lumber yards. Sales have totaled about nine thousand copies and a third volume is now in preparation.

On the matter of A.I.A. Chapter sponsorship of organizations of this type, Mr. Larson has the following to say, "Those Chapters that oppose any small house service bureau on a national scale may also not agree that the Architects Home Plan Institute should have the endorsement of any A.I.A. Chapter. The Minnesota Chapter feels, however, that its endorsement of the A.H.P.I. is a strong assurance that the latter will keep its work on a high plane of altruistic endeavor. The members of A.H.P.I. have found that the public is coming into their offices as never before, asking about these small homes, and sometimes about other projects as well." Mr. Larson then deviates somewhat from the purely altruistic towards the realistic, and continues: "It is true that time is often wasted, but each inquiry is another opportunity to show that architects have something special to offer even on the smallest problems. Those that come for a 'GI' house may not hesitate later to come to an architect for his first small business building, and then his larger project. These same people may some day be on building committees and because of their earlier contacts will know more about architects and their work. It is definitely a method of educating people in the ways of the profession."

A younger group is the "Architects' Small Homes Council of Delaware," sponsored by the Delaware Chapter, A.I.A. Just entering its second year, this organization is developing a somewhat different approach than that used in the case of Minneapolis. A tie-up with newspapers and a prominent Wilmington bank are the principal ingredients. One new house plan, designed by a local architect, is published in the Wilmington papers each month. Any interested reader can look at a set of drawings in the main offices of the bank, and can obtain a full set of drawings and specifications for $35. It appears to be optional with the purchaser whether he then retains the architect for complete supervision, for partial supervision on a per-inspection basis, or whether he simply turns the plans over to his contractor.

From the answers brought forth by our questionnaire,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HOUSES FOR THE PACIFIC NORTHWEST

it seems probable that the proper set-up and organization of such groups has much to do with their survival. They do not fail for lack of business; the prospective small-home builder seems glad of a chance to get professional advice. Most commonly the group simply falls apart as soon as the membership, individually, become "too busy" to devote the necessary time to the venture. Tight, efficient organization, an even distribution of the work, and a genuine conviction that the program is worth maintaining seem absolutely essential.

Some of the responses received indicated that certain of the writers were not at all in favor of plan-selling movements of this sort, the reason, in general, being that stock plans for houses always required many changes to make them fit specific sets of conditions of site, orientation or family needs. Both the appearance and the functioning of the house can be ruined if the architect does not supervise as well as design. The majority of the Chapters, however — even those which had no program under consideration — seemed to feel that the small-home field was a badly neglected one and that "something should be done about it."

In closing our consideration of this group method of "doing something," one point raised by the Minneapolis architects seems worth emphasizing. To quote: "At first the design committee was a little too lenient, but experience has proven that to get the best designs they must be critical." That seems a very good piece of advice to groups which may now be forming. After all, the whole objective is to bring to a certain segment of the public the best in contemporary architecture. Perhaps one could justify the point of view that these services are not designed as money-making schemes, nor are they supposed to compete actively with the wares of an operator-builder. There seems little justification ever to design down to some imagined level of public taste; it would seem better to do a thoroughly contemporary, forward-looking professional job and help that large and growing body of persons who want that kind of house and who can find it nowhere at a price they feel they can afford to pay. The issue seems to get hopelessly confused when we begin to worry about the people who may *not* want that kind of house; they are quite evidently taken care of already.

What might be called the engineering approach, our third category, to a solution of the small home problem has been covered too thoroughly elsewhere to warrant more than brief mention here — although it may ultimately achieve a solution so complete as to make other large-scale programs unnecessary.

Prefabrication, in all its varied forms, has a number of brilliant protagonists among architects and designers. Their aim is to bring to the public a thoroughly con-

Some house plans in today's idioms are offered by architects either with or without various services

temporary house better designed and better built than has been the case, and to sell it at an accurately predictable figure which shall be less — some hope substantially less — than is possible through conventional design and construction methods. Despite many individual failures, and the enormous complexity of the problems of prefabrication on a big-industry scale, this work continues to progress and the very boldness of the approach almost guarantees some startling results when and if it should become a completely successful operation.

A similar vehicle, but one not necessarily tied to the mass production of housing units, is modular coordination, a part of our first category. As this development expands and is taken up by more architects and more materials and equipment manufacturers, it may bring important savings of time in drafting rooms and of money on the site, which in turn will put the profession in a position to be much more useful in the small house field. There can hardly be any question that one of the most attractive features of a shiny new real-estate development, so far as the small-house buyer is concerned, is that the salesman can tell him — right down to the second decimal place — how much he'll have to pay for a certain house. If modular coordination will help the architect to be similarly dependable in his estimates, life will get sweeter for the little client, and there will be fewer hard things said about architects as businessmen. Further, the savings effected in time and materials should give the architect access to a wider public without too greatly increasing the burden upon him. It would be interesting to see what would result from a combination of the architectural cooperative and the use of modular coordination in the field of small house planning and design.

Finally we come to the individual small house commission undertaken as part of the regular business of an architectural office, our first main road or category.

This method of dealing with the small-house problem may well be too individualized, in the case of different architects, to warrant being called a method. We are also well aware that there are architects who feel that this way of trying to cope with the need for better small houses is, under current conditions, quite hopeless. Most of them will substantially agree with a distinguished member of the profession who recently wrote us: "I have been in the residential field for twenty-five years, and it is my confirmed opinion that as long as saw and hatchet butchers are permitted to throw together four walls and a roof at their discretion and offer same to the uneducated public at whatever profit they see fit, it will always be unprofitable for any licensed residential architect to secure sufficient volume to justify any interest in the small house field.

"When a large office — or rather, a capable office — does produce plans for small houses it is usually on a gratuity basis and the office loses money on the venture.

"When all small housing throughout the nation can be channeled through legitimate architects' offices there will be a volume to justify training draftsmen for this type of work. Until then, the profession as a whole just won't be interested. . . ."

If in general we accept this point of view — and it seems a hard one to quibble with — then we cannot expect to see much increase in the trickle of really small houses coming out of "capable" offices. But it seems to us that the trickle, however small, is most important. Fortunately, a fair percentage of these small houses is coming out of offices which are among the most competent in the country. In relation to the small-house problem as a whole, we may think of these houses as individual and full-scale experiments. The great variety of plans developed in this way, involving the consideration of many different site and climatic conditions, and different family requirements, afford a background of experience and attainment which should prove valuable to anyone working in this field, however novel or radical his individual approach and however different his end result.

Furthermore, these houses are proving irresistibly attractive to the editors of popular home magazines and, through their publication, are unquestionably doing a great service in educating the public to understand the advances that have been made in small-house design, and in familiarizing them with the atmosphere of the contemporary home. Editors are sensitive to their public; the fact that more and more space is being devoted to small houses of the more advanced type is a dependable indication of what kind of houses the public really wants.

The sum total of all the foregoing may be taken as inconclusive; yet it shows progress developing along a number of different lines — the opening of several possible avenues of attack on an important national problem.

Other groups, governmental and private, are also thinking about the small-house field. Should their deliberations be carried on, and their decisions executed, largely without benefit of architect, the profession will have lost a great opportunity. It occurs to us, sometimes, that is easy for the architect to underestimate his own importance in this particular field.

Any national program to bring better houses to the people of this country ought to be spearheaded by the architectural profession. There are responsible individuals in the ranks of registered architects entirely capable of leading the profession into such organized action. The trend encourages us to believe that ultimately this will happen; but "ultimately" may be too late to have any marked influence on another decade of tawdry, cynical and incompetent building which may already have begun.

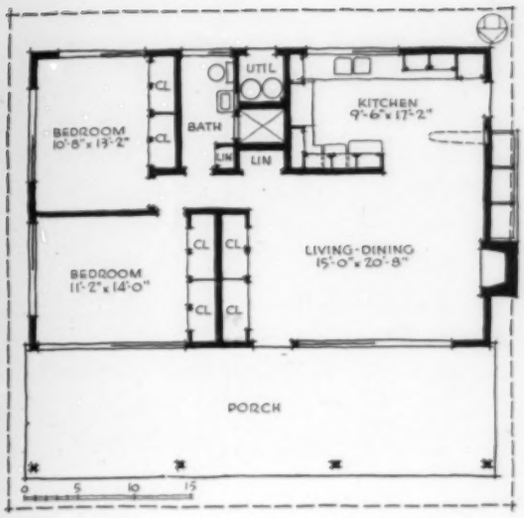
A BEFITTING SETTING FOR A WAY OF LIFE

Home for Mr. and Mrs. M. P. Davison, Fresno, California

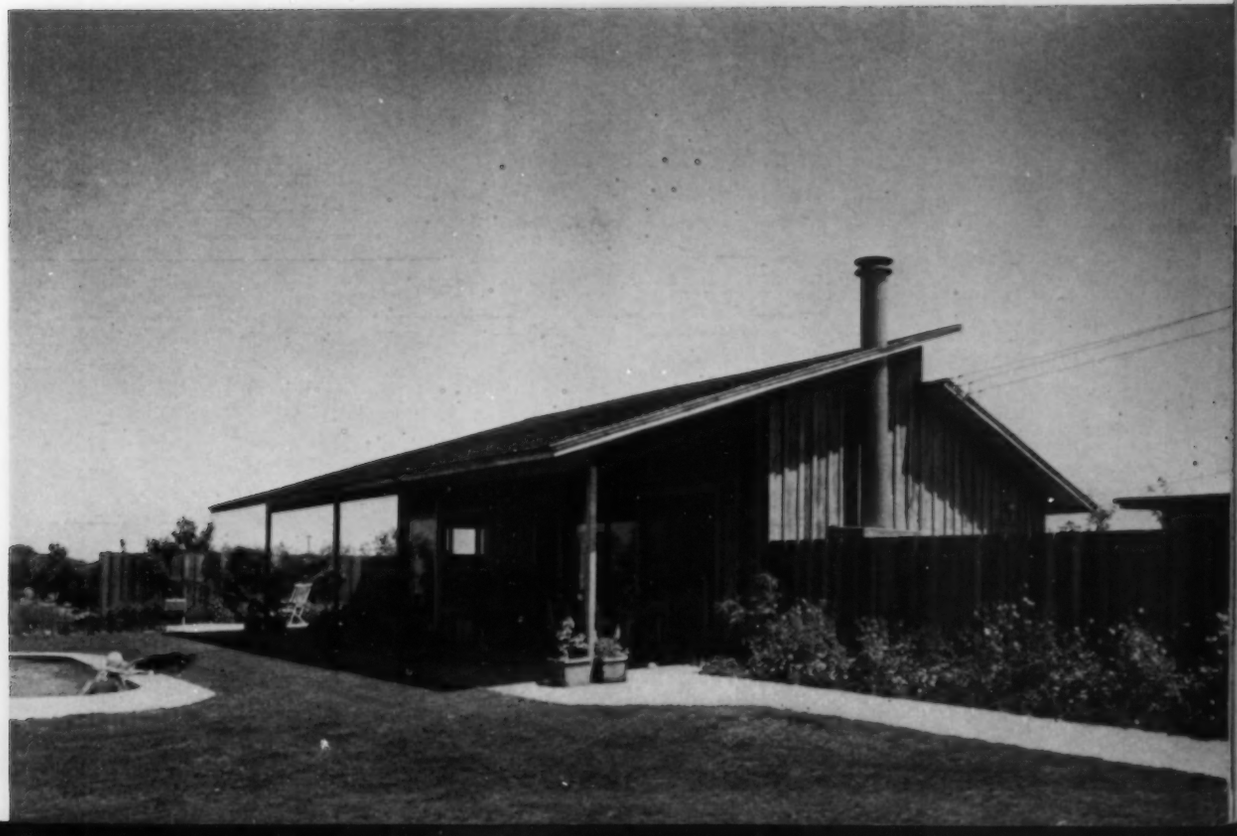
Wurster, Bernardi & Emmons, Architects

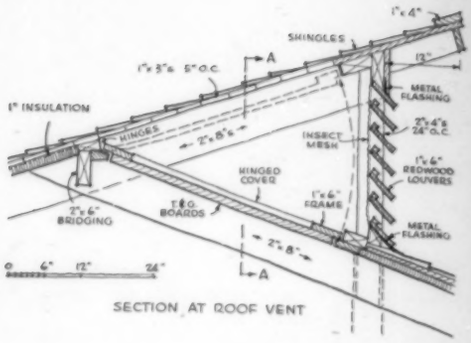
AS WAS NOTED in the preceding article, some of the best architectural firms in the country have found ways of including a certain number of small-house commissions in their annual output. Of these firms, none has done more to raise the standards of small-house architecture to new levels of distinction than have the designers of the house shown on this and the following pages. In plan, this house is the very essence of the small — almost minimal — house. It was originally intended for occupancy by the owners pending construction of a larger house, and subsequently to be used as a guest-house. The owners have come to realize, however, that a large house is an anachronism in these servantless days, and, finding that the small one fitted their life and needs very well, they ordered a still smaller guest-house and have abandoned the larger project entirely. Undoubtedly, there are factors other than the compactness and livability of the plan that have appealed so to the owners, for in the proportions of the structure, as in the direct handling of the simple materials, there is a sureness of touch that is extraordinarily satisfying. There is a full and comfortable recognition of regional problems — especially the summer heat. And there is good local precedent in the loggia-like porch, first brought to this vicinity by Italian viticulturists, which is admirably suited to informal outdoor living.

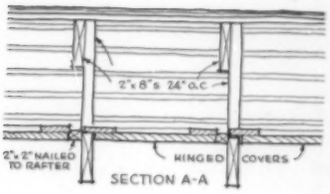
In deference to the redoubtable heat of Fresno's summers, the large windows and the porch face north, with a swimming pool just beyond the line of shadow. Exterior walls of the house are redwood boards and battens, primed on sides and edges with boiled linseed oil before placing



Roger Sturtevant Photos



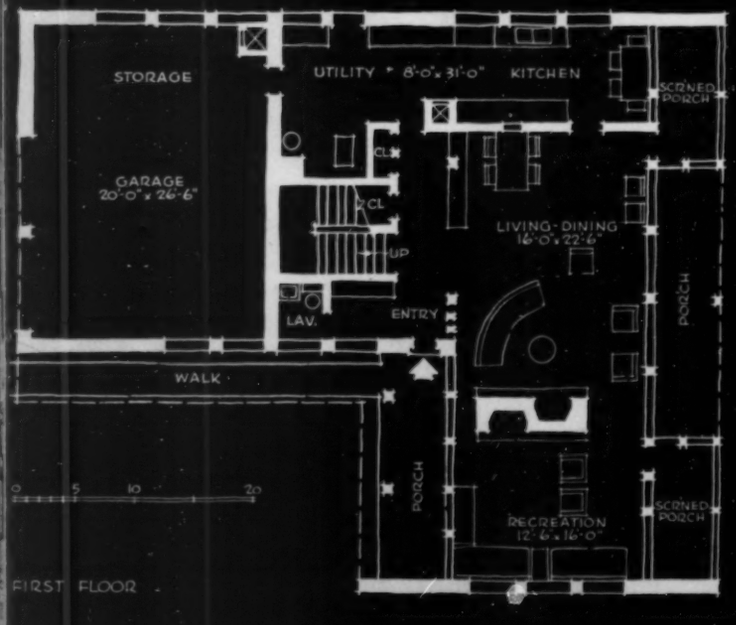




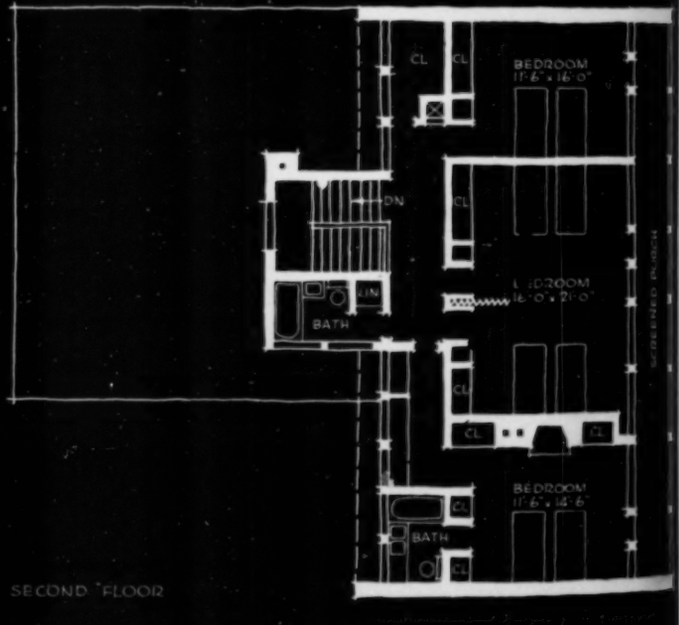
Above: a detail of the ventilating louvers which extend the full length of the house, and which are seen in the photograph above, left, as well as in the picture of the master bedroom immediately below it. Note that the louvers have a hinged cover for use in winter. Most interior walls of the Davison house are flash grain Douglas fir plywood with half-round cover trim at the joints

Above: view from porch, showing pool and guest house. Right: the boys' room, which overlooks a citrus grove to the south; sliding sash is used throughout the house. Below: the living room, seen from inside the kitchen. The house is heated by means of a radiant panel system embedded in the floor slab. There is a certain integrity and strength in this little house which seems to derive from the fact that in no slightest detail does it either fall short of, or go beyond, one's impression of the house as a whole. Compare this with the ornate frippery of applied "art" found throughout the small-house field.

Roger Sturtevant Photos



FIRST FLOOR



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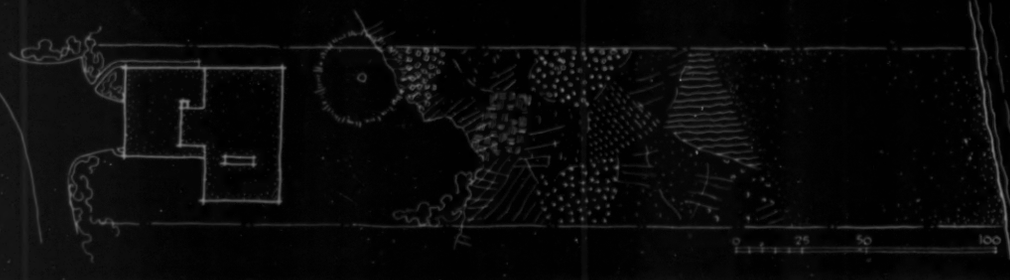


BROAD IN VISION THOUGH NARROW IN LAND

George Fred Keck, William Keck, Architects

Hedrich-Blessing Photos

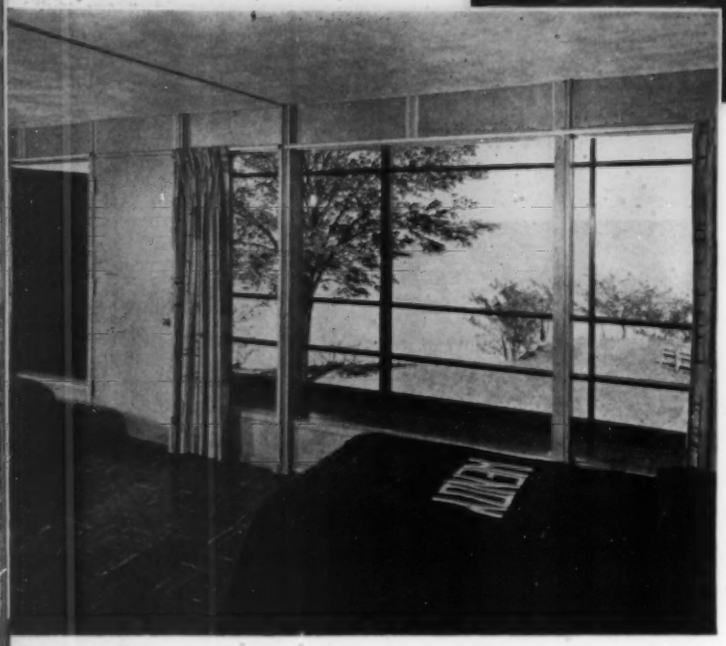
THIS attractive, livable house in Illinois is shown by night and by day, as it appears from the edge of the terrace overlooking Lake Michigan. All major rooms open to the east for the lake view and breezes. Although the house cannot be classified as "small," the basic ideas developed in its design — the simple, open plan; good circulation; multiple use of space, the integration of radiant panel heat, solar heat, and roof overhang — these and many other details are all adaptable to the small house as well as the large. George Keck has done this in his smaller houses as well as in designs he has drawn for a manufacturer of prefabricated houses. Thus the architect becomes the innovator, and his client the sponsor, of new concepts of modern living which, if they could reach the small-house field to any impressive degree, would enormously benefit the average citizen.

Above: this view of the recreation room shows high windows to the south in the masonry end wall, and to the west in the wall toward the entrance drive. There is foam-glass insulation between the inner and outer stone surfaces, rock wool in wooden walls and roof. Below, a sturdy china and glass cabinet screens the dining space from the stair hall. Note the convenient pass-cabinet between dining room and kitchen with doors which close flush

Above: the living room fireplace occupies one-half the width of the chimney, the other half backing the fireplace in the recreation room beyond. All interior walls and ceilings are of varnished exterior cypress; a radiant panel heating system is used throughout

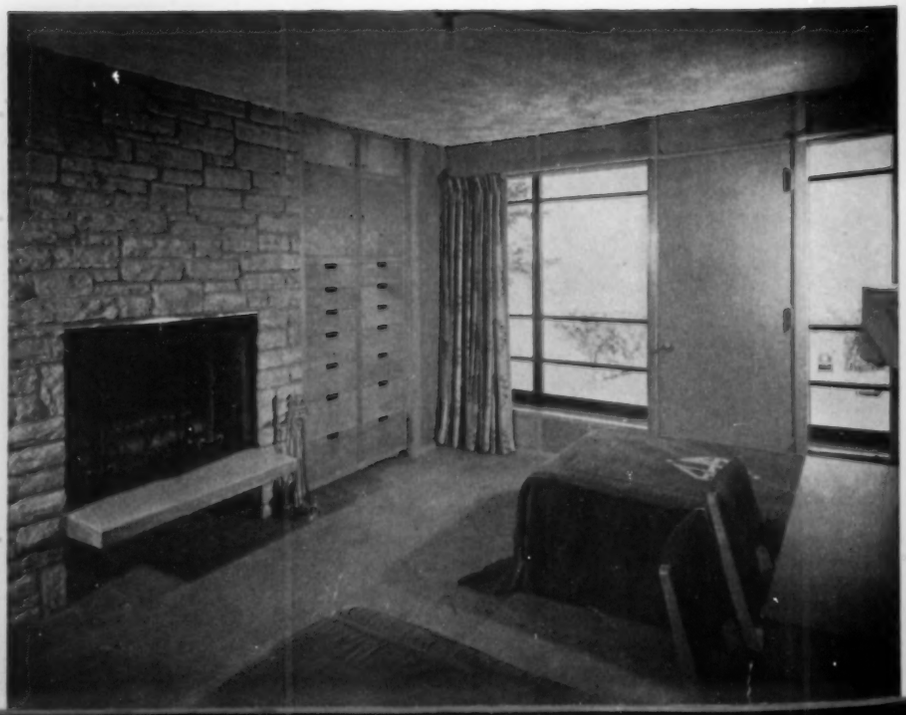
Hedrich-Blessing Photos

Right: the handsomely appointed kitchen has the service entrance, utility room and door to the garage at the farther end, in this photograph; entrance to living-dining room is at left of camera. A distinctive feature of this house is that all windows are double-glazed fixed sash, with transoms and louvred openings provided for ventilation. On the blustery shores of Lake Michigan, this is doubtless a practical and effective solution, but in more protected locations it is debatable whether such a system would completely replace operating sash in the affections of the public.



Hedrich-Blessing Photos

These two views of the children's rooms which occupy the center section of the upper floor show how the rooms may be divided by the folding partition or opened up as a play area. The built-in wardrobes and chests encourage youthful orderliness. The intelligent and considerate planning of children's rooms is one of the notable developments of contemporary residential architecture



Right: the master bedroom, like the other bedrooms, opens on the screened porch which runs the length of the house. The highly organized storage space, seen here and elsewhere in the house, is built in and eliminates the need for much of the usual profusion of protruding and dust collecting furniture

Gottscho-Schleisner Photos

EXPLOITING THE MID-LEVEL ENTRANCE

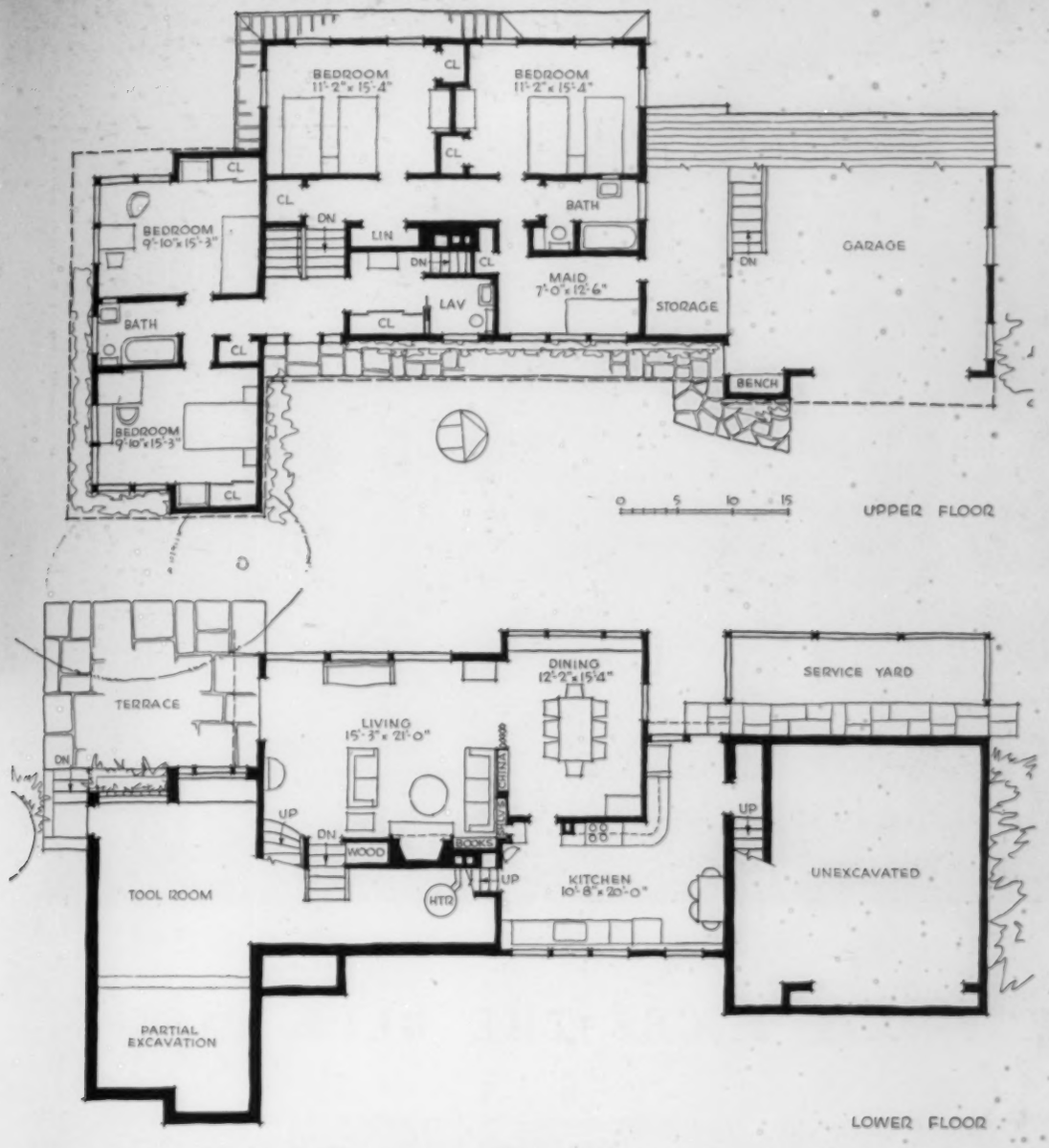
House for Mr. & Mrs. R. W. Chamberlain, Kensington, Conn.

Moore & Salsbury, Architects

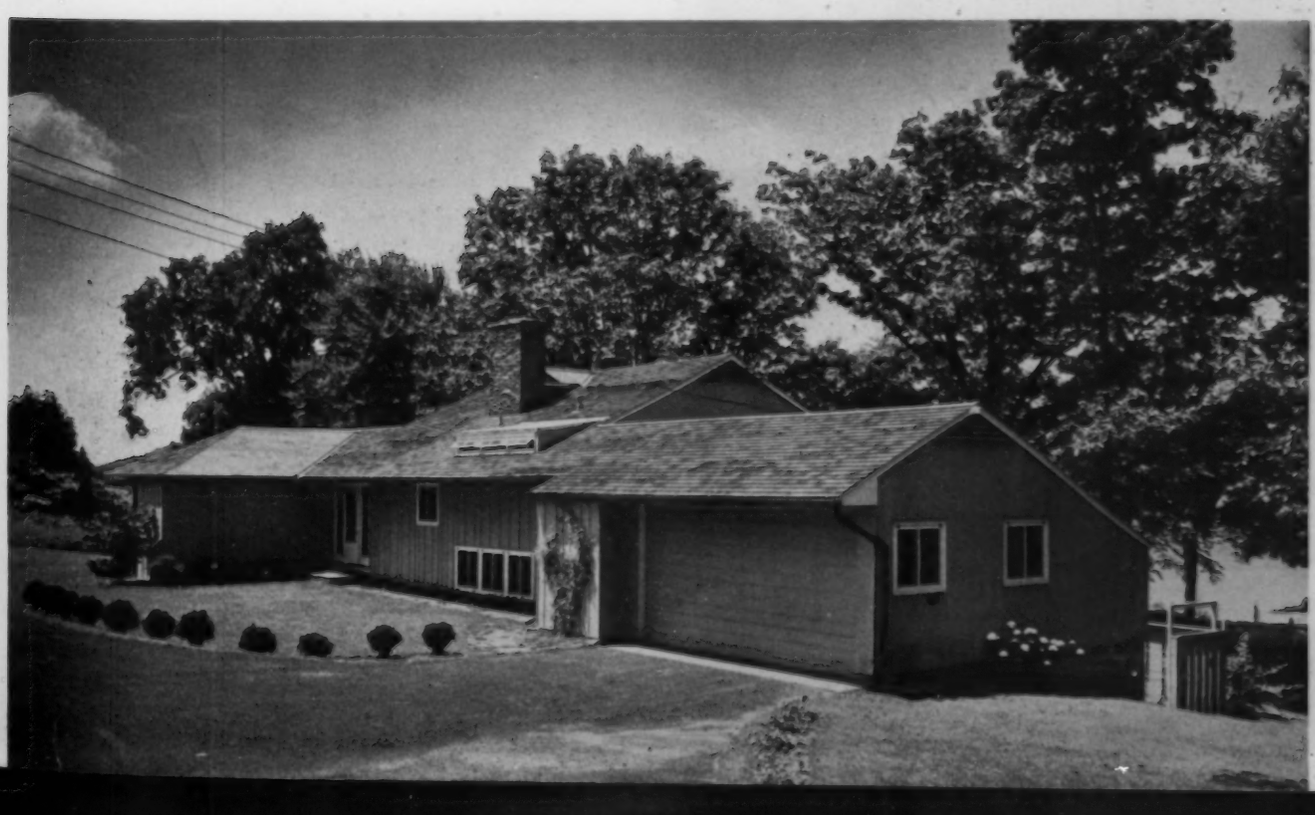
SITUATED in the pleasant, rolling hills near New Britain, this house takes advantage of its sloping site to make itself modestly inconspicuous on the side facing the road, while opening out to generous two-story proportions on the side with the view and the terraces. As is always the case in plans of this general type, the entrance façade affords no clue to the number and size of the rooms, to which pleasant surprise is added the unfailingly dramatic touch of the "down-hill" approach to the living room. Two bedrooms are on the entrance level and two are up a half flight over the living and dining rooms, and each has two exposures.

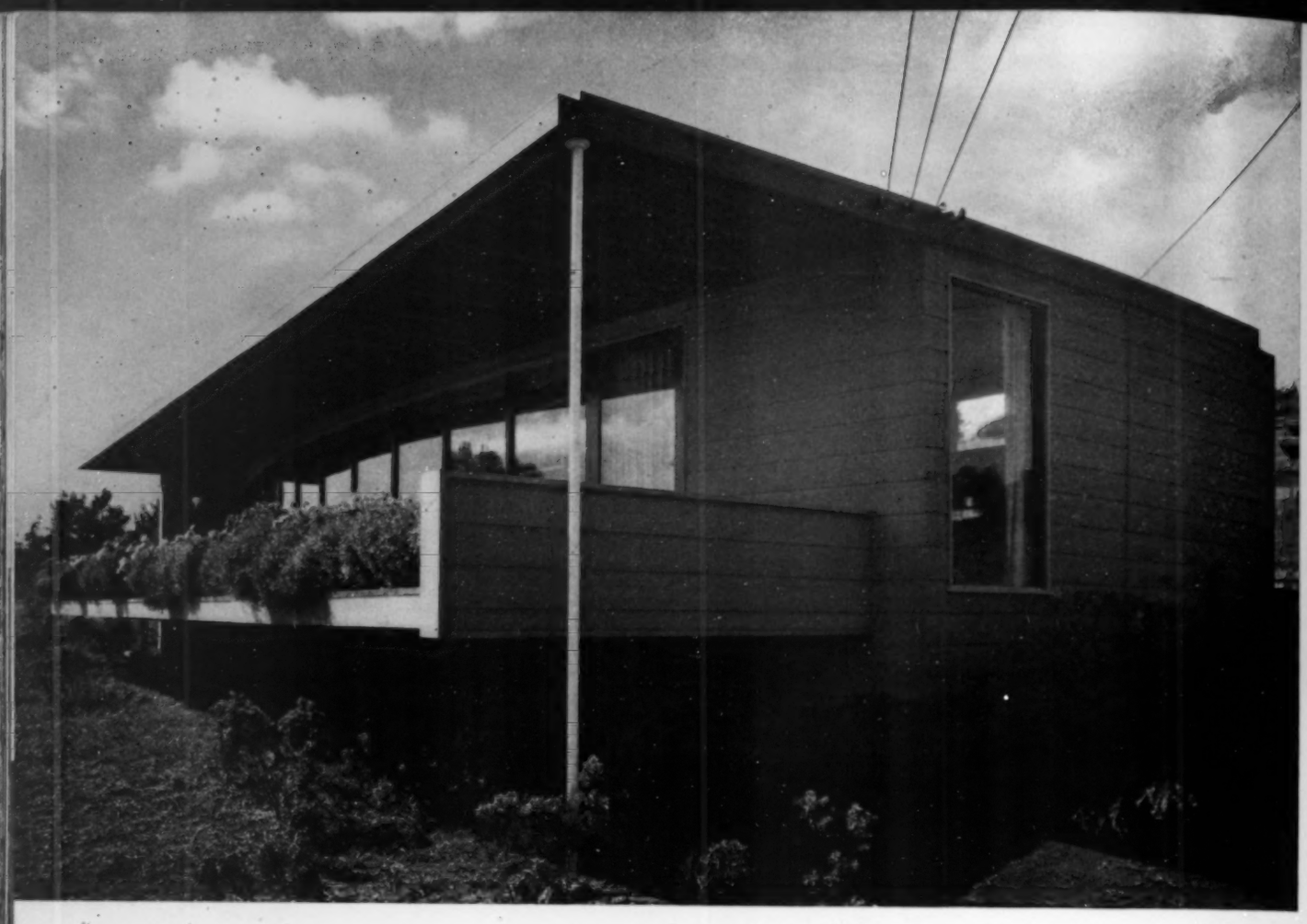
Gottscho-Schleisner Photos

Above: native stone blends with walls of combed plywood to create a restful background in the living-room. Left: in the dining-room, open shelves afford an opportunity to display colorful china, and a folding partition serves decorative as well as practical functions. Below: the door at end of the kitchen opens on back stairs leading to the entrance hall above



Upper plan shows an unusual and convenient separation of master bedroom suite from the rest of the house at the entrance level. From this level one goes down to the living room, or up to the other two bedrooms (see stairs, right). At right, above, the view of the entrance shows details of the walls and overhang. An air of simplicity and repose characterizes the approach view, shown below





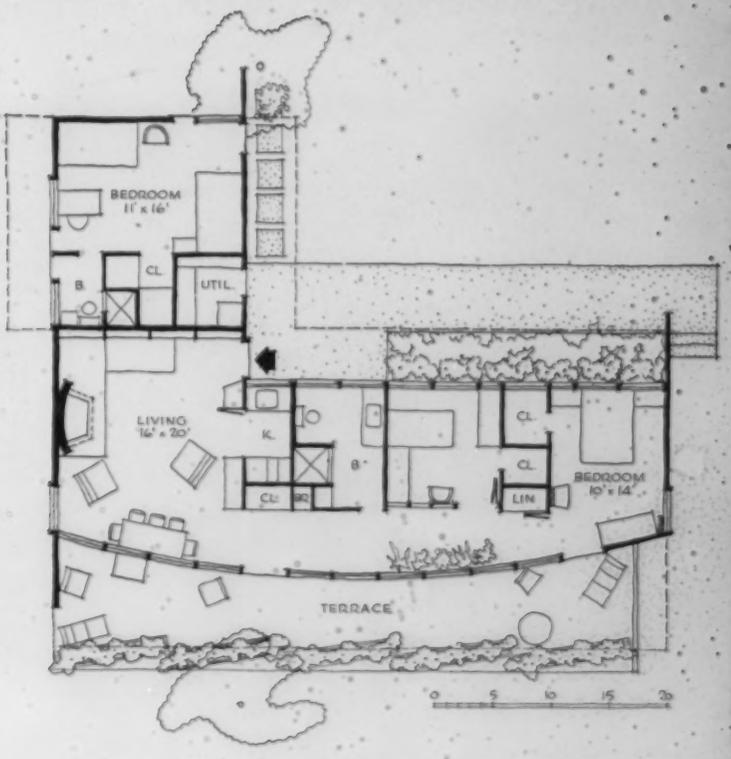
THE BOW FRONT FACES THE BLUE PACIFIC

House for Capt. and Mrs. W. S. Chitarin, Carmel, California

Albert Henry Hill, designer

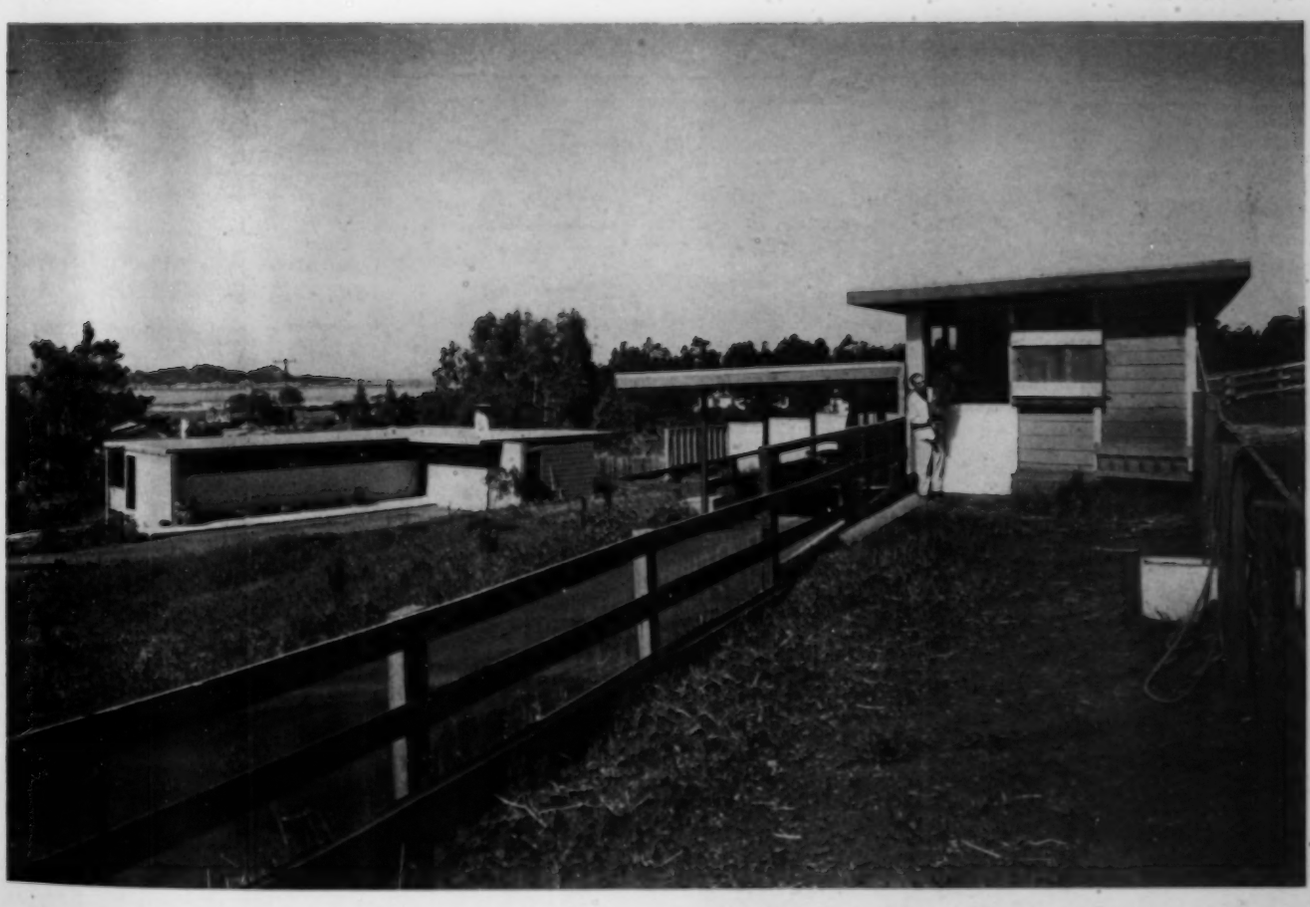
Eckbo, Royston and Williams, Landscape Architects

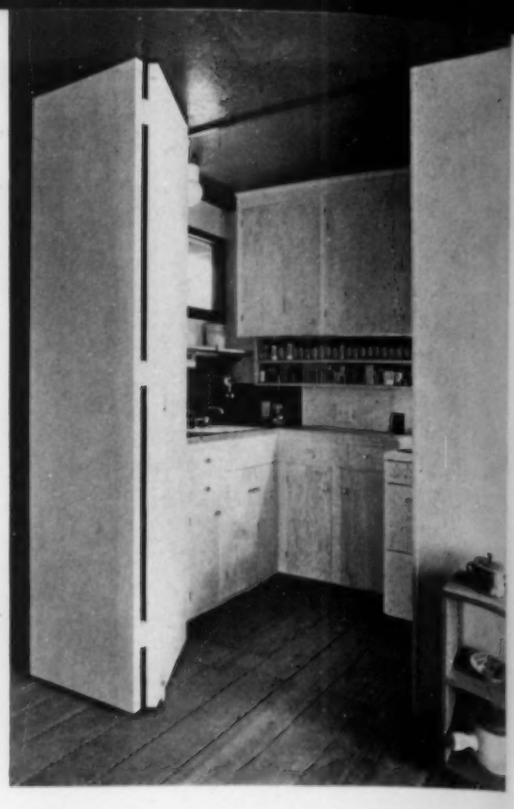
AN EMERGING aspect of the small home, which may have increasing significance for architects, is indicated in the frequency with which clients who have built a small house for temporary occupancy — pending construction of a larger place — have found the compact and convenient dimensions of the smaller, "servantless" house unexpectedly workable and pleasant. The house shown on these three pages was originally planned for use by an invalid — which accounts for certain design features — and subsequently as a guest house, but is now proving a satisfactory home pending completion of plans for a larger house adjoining. The glazed bow front provides a pleasant protected gallery-deck behind the open flower-fronted porch, and the broad roof overhang shields both.



Above, left: the long level slab at the entrance was originally designed to facilitate use by an invalid in a wheelchair, which also accounts for level floors, wide doors, and the wide gallery connecting living room with bedrooms. The separate bedroom was intended for a nurse but is adaptable for guest use. Below: stable, car shelter and, further down the hill, the house

Roger Sturtevant Photos

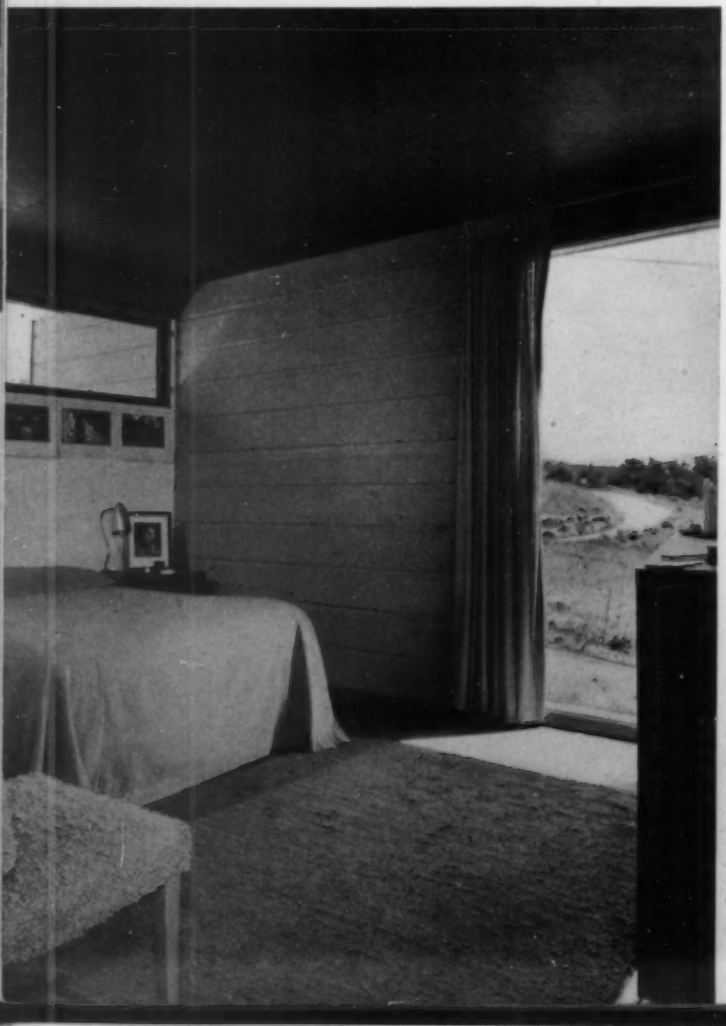


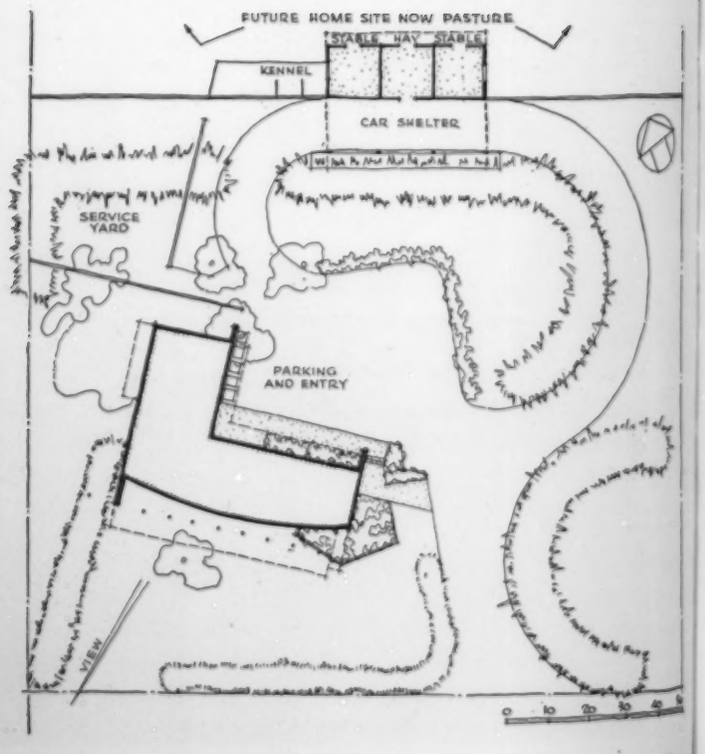


The Chitarin's living room features an experimental fireplace of peculiar design. "In such a small living area it was dangerous to bring the fireplace into the room. Against this was the fact that the minute it was on or set into the wall, it lost its intimacy, [and destroyed the exterior wall surface]." A curved screen of firebrick acts as a heat reflector at the rear, with the chimney flue on a thick slab supported by metal rods. A cone added inside the chimney throat keeps the smoke going in the right direction

Roger Sturtevant Photos

Above: view into the kitchenette from the living room. Below: plot plan shows relation of house to stable, car port and future house. Prevailing wind is westerly and brisk





Julius Shulman Photo

A LITTLE HOUSE WITH A WESTERN LOOK

Residence of Mr. and Mrs. Ted Bonnet, Hollywood, California

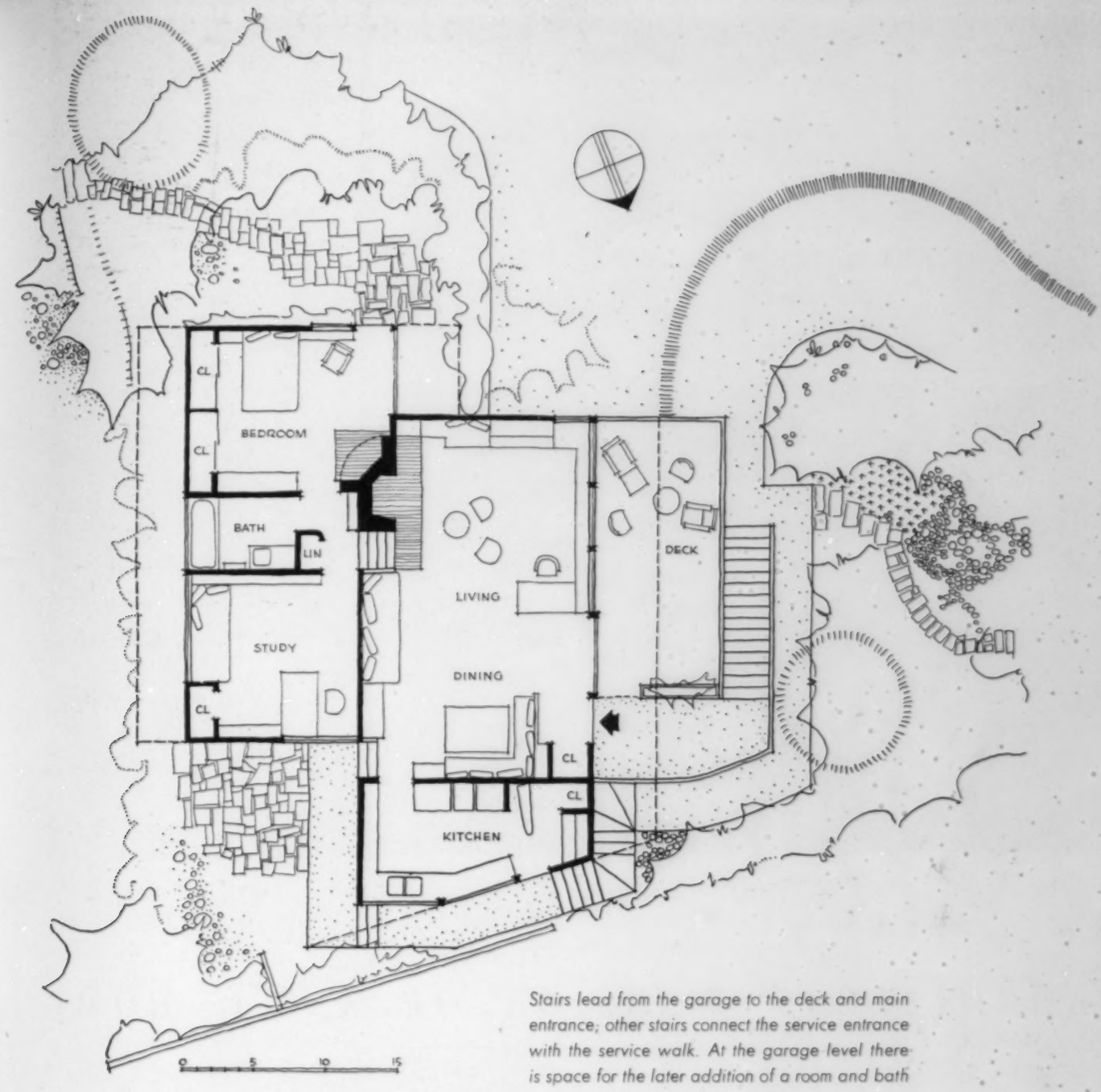
Richard J. Neutra, Architect

WITH its simple, sloping roof prudently tilted toward the valley, this addition to Mr. Neutra's long and distinguished line of small houses has somewhat the appearance of a man who sits comfortably on a hillside with his hatbrim pulled down to shade his eyes as he gazes westward across the coastal plain to the sea beyond. To accommodate itself to the steep site, the plan of the house develops on three levels. On the lowest is the garage, and space for an additional room and bath; next, above, comes the living room, with kitchen and deck; and finally, at a slightly higher level, the master bedroom, bath and study. Basic materials are redwood above a substructure of cement; steel sash; and a metal-coated, heat-reflecting roof. (Plan and other photographs are shown on following pages.)

All photos on this page by Julius Shulman

Above: sliding sash opens from the living room on a flagstone-paved deck over the garage. Left: the whitewashed brick breastwall of the fireplace intersects the sloping ceiling of the living room; stairs lead to the bedroom and study. Note on the plan the corner fireplace in the owners' bedroom served by the single chimney. In this bedroom the view and the cheery fire can be enjoyed simultaneously as window and fireplace are side by side. The Neutra touch is clear in these pictures; and perhaps most significant to the small house field is the feeling of space, variety and refinement achieved in a small area and with the simplest of materials

Left, the kitchen, seen from a point opposite the service entrance. The floor area expands at the working end of the room to afford a long counter and adequate space around sink, range and storage cabinets



Stairs lead from the garage to the deck and main entrance; other stairs connect the service entrance with the service walk. At the garage level there is space for the later addition of a room and bath

The concrete terrace extending along the living-dining area commands a fine view of desert and mountains. The end of the terrace, west of the dining room, is planned to be roofed and screened. Below, the overhang of the roof shields the glass from the hot summer sun, permits it to penetrate in winter

Richard A. Morse and

William Y. Peters

Architects

Above: Maynard L. Parker Photo. Below: Ivan Burkhart Photo

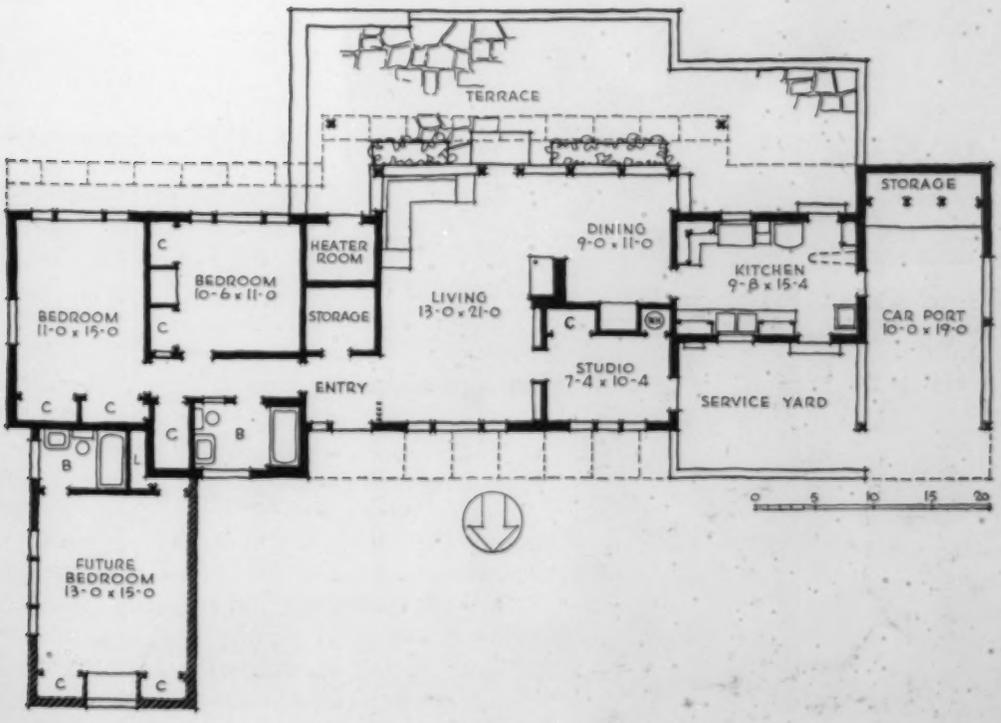
ARCHITECTS' VERSION OF A G.I. HOME

Residence of Mr. and Mrs. William B. Schimmel

Tucson, Arizona

THE owner of this house, an artist, is a veteran of World War II; his home was built under government regulations in effect in 1946 and finished at the end of that year. Present sleeping accommodations — the most that could be provided under law — are somewhat inadequate for a family of two adults and two teen-age children, and another bedroom and bath, for later addition, were therefore provided in the original scheme, as indicated on the plan at right. Despite this temporary deficiency, it seems probable that when this house is brought to the attention of the general public a considerable number of ex-G.I.'s who have bought homes since the end of the war will have occasion to make rueful comparison between this house and what was sold to them. Whitewashed local common brick, exposed on the inside, is the principal structural material. The forced warm-air heating system is integrally combined with an evaporative cooler for summer use.

Maynard L. Parker Photo



A new bedroom wing will extend out from blank wall at left in this photograph; entrance to house from carport, at extreme right, is through the walled service yard. Roof is built-up composition over 4-in. mineral wool insulation

Maynard L. Parker Photos

Floors throughout are colored cement on concrete slab. Except in kitchen and bath, ceilings are V-jointed pine boards, oiled and waxed. Walls are painted

Julius Shulman Photos

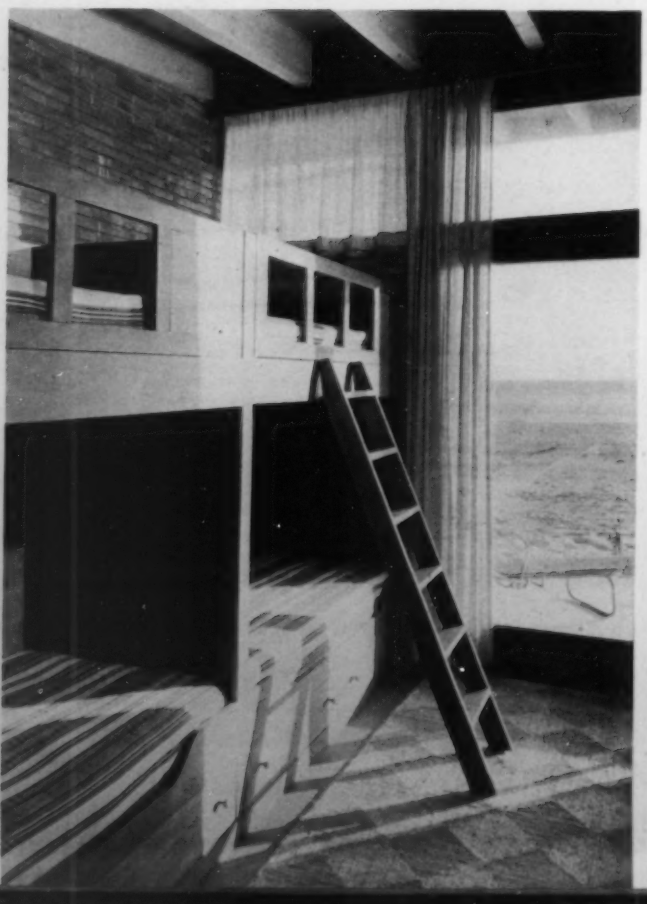
FOR LIVING BETWEEN SEA AND LAND

California Beach-House for Mr. and Mrs. Welton Becket

Wurdeman and Becket, Architects

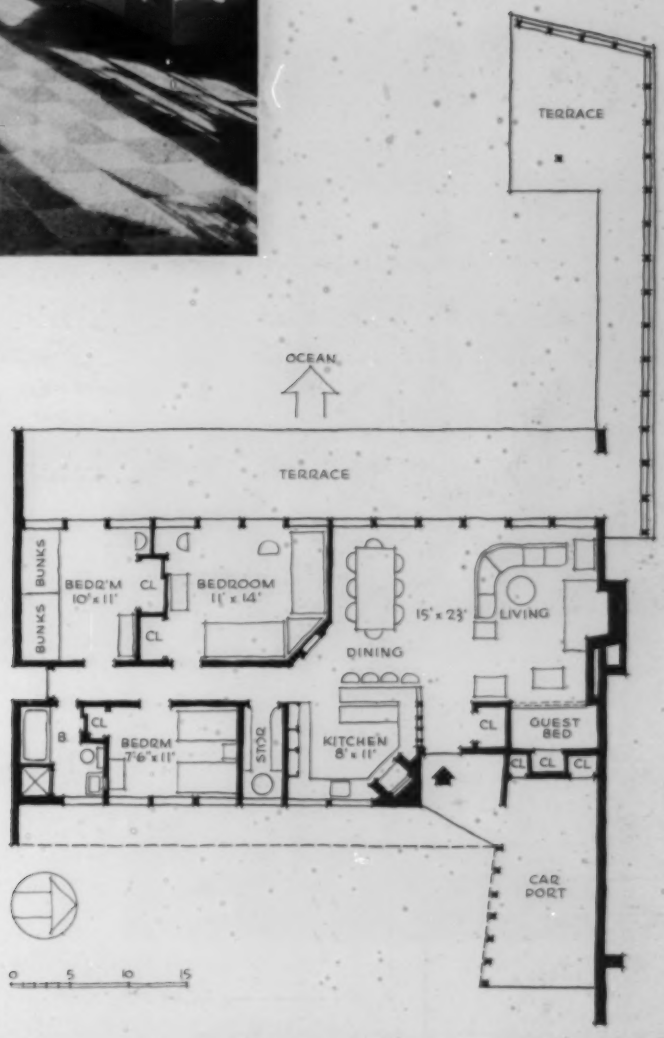
ALTHOUGH certain features of Mr. Becket's house merit thoughtful study in the light of their possible application to the small house problem generally, it must be admitted that much about the house proclaims its special and pleasant function as a beach-house on the rim of the Pacific. Eating, for example, has a top priority where appetites are sharpened by sun and surf; so it is hardly surprising to find the kitchen at the very core of the house, much more an integral part of the living areas than a separate unit. The long plate glass screen protects the terrace from wind and blown sand, while an outdoor shower next to the entrance to the bedroom corridor materially reduces the amount of beach deposited inside the house. (Plan and more pictures overpage.)

The glass wind-screen projecting toward the water terminates in a shaded terrace, also glazed. Here, for variety and relief from glare, patterns of eroded earth behind the house can also be seen



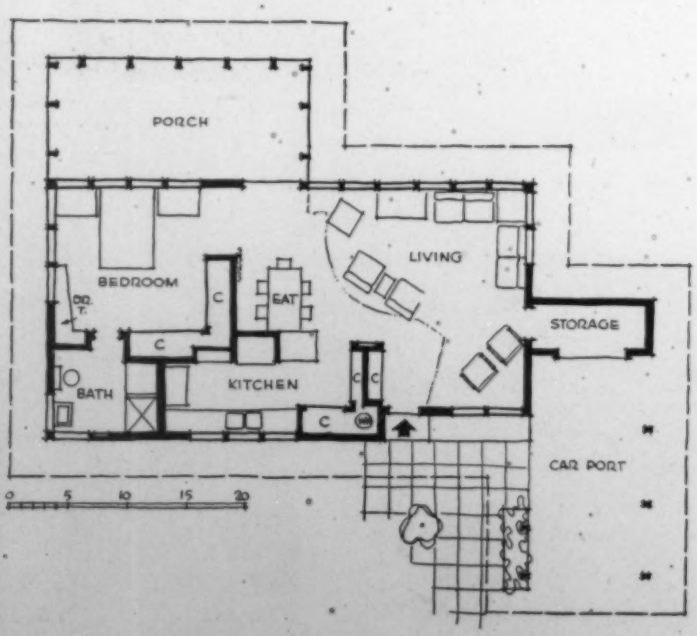
Above: both end walls of the house, like the fireplace, are Roman ruffle brick; other walls, inside and out, are redwood siding. Ceilings are Douglas fir. The alcove in the corner of the living room can become an overnight guest accommodation. Left: the two young boys occupy this room, with bunks for two visiting friends; but there is always the difficulty of making up an upper bunk, even with Pullman-porter technique and a thin top mattress

Julius Shulman Photos



Above: the kitchen occupies about a third of the living area, of which it is an integral part — open, accessible and inviting. Food preparation is here a part of family life and whoever is doing the cooking can be cheered on by all present, a system which could work well in many small homes. Other interesting features of the plan, at right, are the kitchen's built-in barbecue, and the capacious storage pantry

WHERE A SPREADING ROOF IS A BIG ASSET



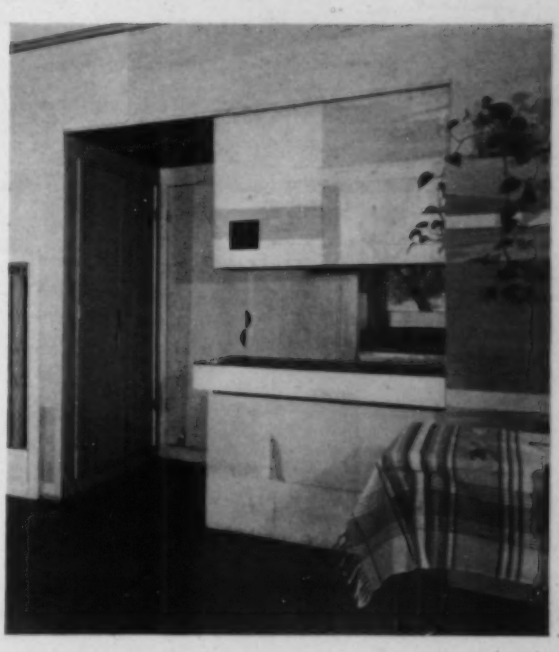
Home of Mr. L. Brooks Martin, Bryan, Texas

L. Brooks Martin, Architect

IT IS apparent from the plan of Mr. Martin's house that, in addition to good ventilation, shade is a valuable commodity in Texas. He estimates that the total roof area is about 2220 sq. ft., of which only 800 are over interior space. The owner-architect decided to cope with the climate at the drawing-board stage. Though small, the house is openly and spaciously planned, with convenient storage partitions; note the bedroom wardrobes. Evidently access to the bath other than through the bedroom was not considered necessary in a house of this size as it would entail loss of useful space in both kitchen and bath.

Roland Chatham Photos

Above: cool linoleum surrounds the carpeted floor of the furniture grouping in the living room. An electric radiant heating panel takes the place of a fireplace on the partition between entrance to living room and kitchen



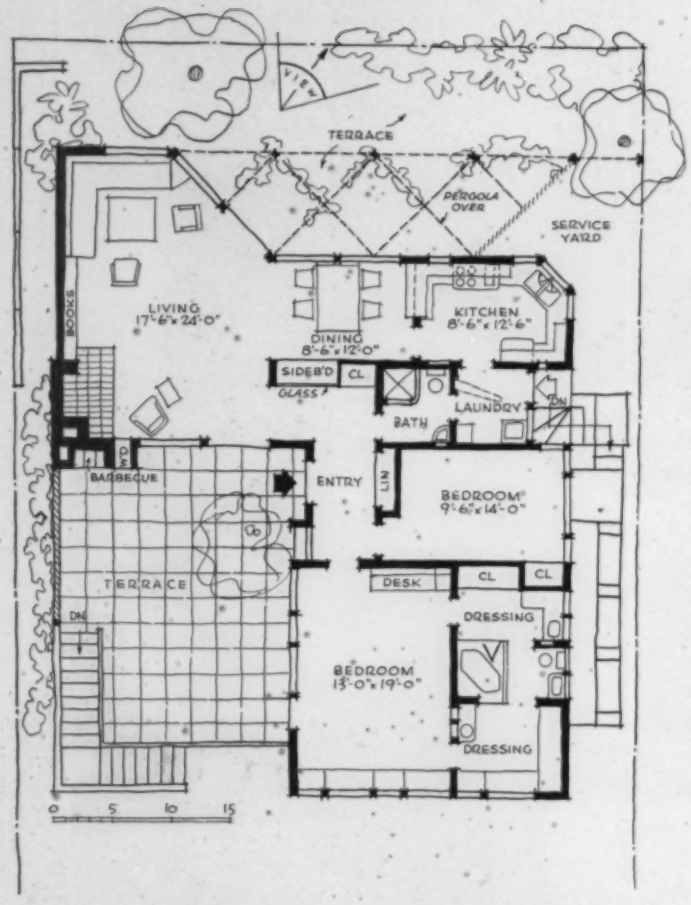
Right: detail of pass-counter to kitchen from dining table. Cabinets and cupboards keep everything close at hand but out of sight

Below: drapes are used on windows and doors, and between living and bedroom. The open weave of the fabric indicates that when they are drawn some air can still get through

CUSTOM-DESIGNED FOR A STEEP SITE

House for Mr. and Mrs. Rubin Sabsay, Los Angeles, California

J. R. Davidson, Designer



IF people who are planning to build would consistently buy a level site, it would simplify matters for prefabricators and the compilers of plan books; but so long as a better view and a sense of relative isolation can be had by purchasing an "exceedingly steep and narrow property" (Mr. Davidson's description of the Sabsay lot), the attraction will prove irresistible. Few preconceived designs will make the most of such a location. Mr. and Mrs. Sabsay, both of whom are teachers, have one child. The house had to be planned for minimum maintenance, minimum effort in housekeeping, rooms all at one level. Taking advantage of the drop in site, Mr. Davidson provided a separate rental apartment below the owners' rooms. The amount of space devoted to bath and dressing rooms — unusual in so small a house — is justified as both adults must dress and leave for their work at the same time daily. It is a plan feature worth considering!

Julius Shulman Photos

Left: a corner of the living room. The sliding doors at the right open on the dining terrace (seen at top of opposite page). All walls and ceilings, except where paneled with Douglas fir plywood, are a warm gray interior stucco

Above: the dining terrace, with doors to living room at right. In the wall at left can be seen the small pass door to kitchen. Below: the angle of the sliding doors is nicely arranged to bring the best view to the corner of the living room. The storage wall, right, separates entrance hall from dining space, beyond which is the breakfast bar wall of kitchen

Julius Shulman Photos

Above: from the fireplace end of the Sabsays' living room, another sliding door opens on the larger terrace which, provided with the ubiquitous and indispensable barbecue, helps stretch the somewhat limited entertainment facilities of this little house

Left: plywood storagewall with a reeded glass panel. Small door at left of panel conceals the glass cabinet. Below, pass doors serve dining space and terrace

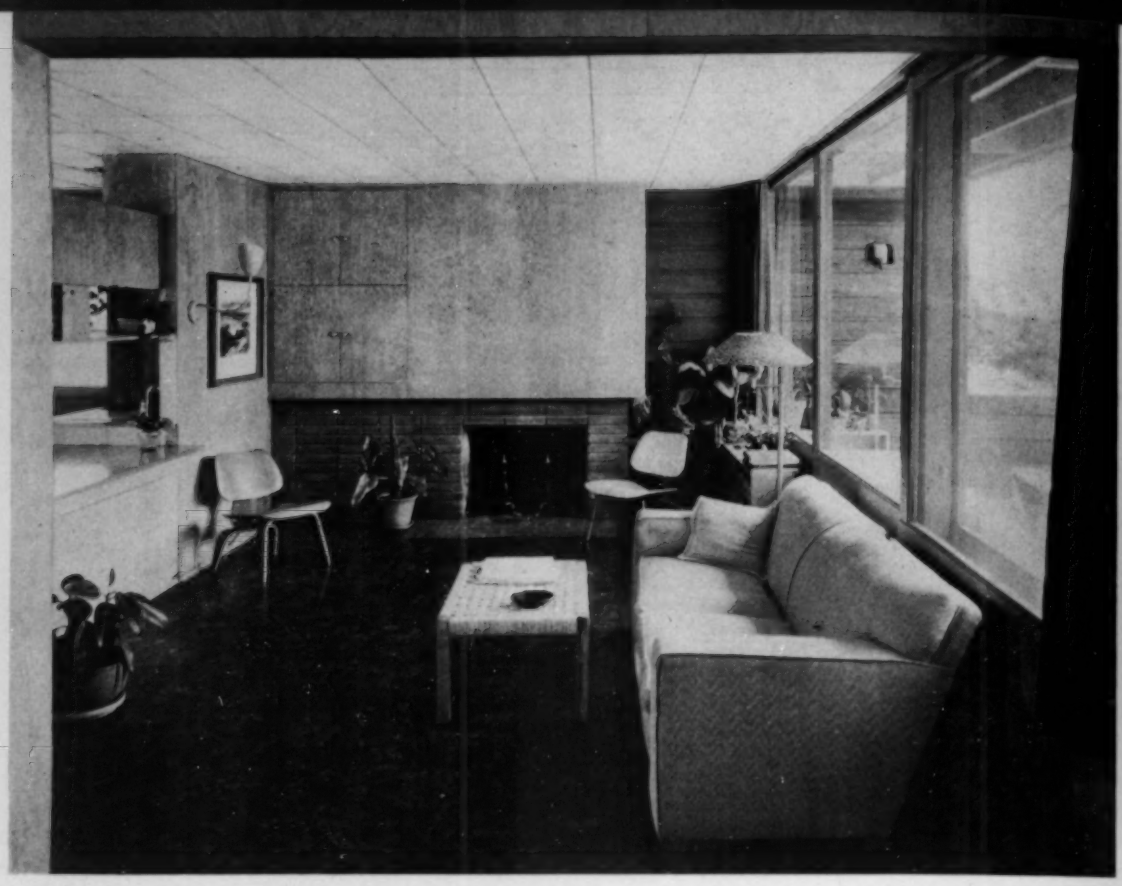
Paul Davidson Photos

INGENUITY PROVIDES SPACIOUSNESS

House for Mr. and Mrs. Albert Tarter; Los Angeles, Calif.

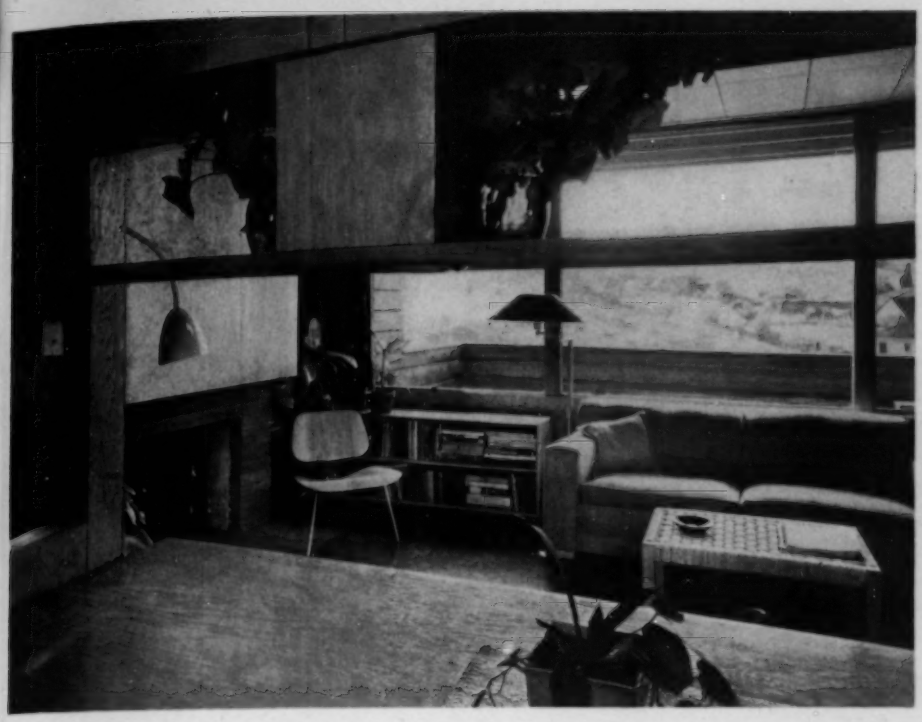
Gregory Ain, Joseph Johnson & Alfred Day, Architects

By means of a number of ingenious devices, the designers of this small house have succeeded in providing the spacious feeling, as well as the actual facilities, of a much larger place in the limited floor area of 908 sq. ft. Most important, as contributing to this happy feat, are two rigid, sliding wall panels which allow a very flexible use of the available space, and the preservation of an almost uninterrupted ceiling over more than half the rooms, which gives them a feeling of size considerably beyond their actual dimensions. The entrance side of the house is seen above; the opposite side below. Exterior walls are redwood shiplap siding; roof is white-surfaced, built-up composition; interior floors are asphalt tile. The plans and interior photographs are shown on the following two pages.



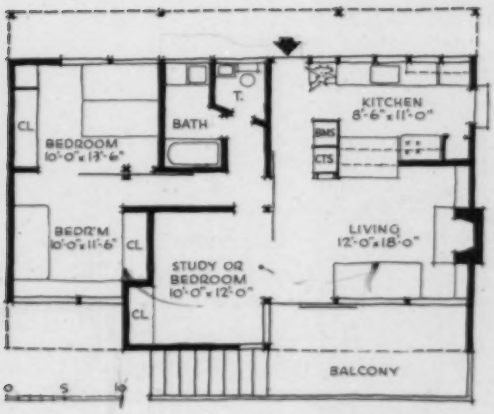
Above: the living room as it appears from the study, with the sliding panel drawn back against the wall of the entrance hall. All interior walls are Douglas fir plywood. Note storage cabinets at left of chimney. In addition to other devices previously mentioned, the large windows also help materially to increase the apparent size

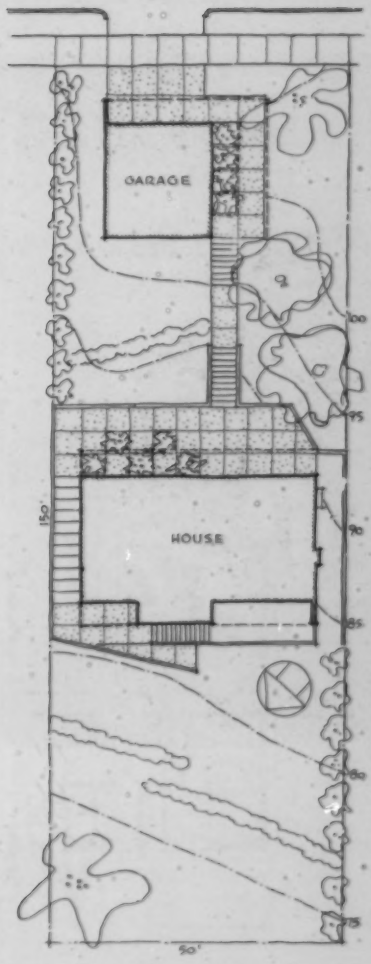
Above: the broom-coat closet is held to a 6-ft. 8-in. height so that the living room, entry and kitchen appear as one space, a feeling which is further heightened by the large opening between living room and kitchen. Below, left: the rigid plywood panel, which runs on floor sheaves, here closes off one end of the living room; at right, the same wall opened up reveals the study as part of living room



Paul Davidson Photos

Left: the dining table fills the opening between living room and kitchen, is a part of both, yet wastes little floor area when idle. In the floor plan, note the other sliding panel, between bedrooms, which makes a child's play space when open; also the divided bathroom, with laundry



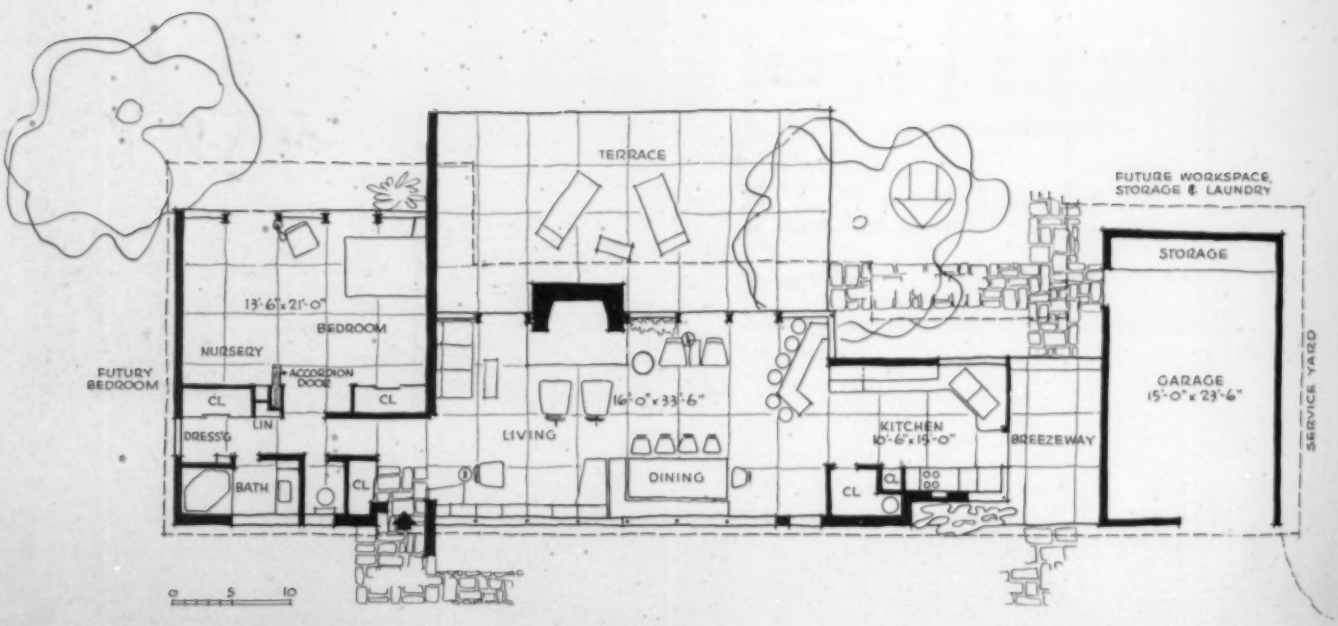


The garage, a corner of which is shown at left, is near the street and at a considerably higher level than the house. It is reached by means of a flight of steps

Fred Gund Photos

DESIGNED ON THE MODULAR PRINCIPLE

Walter T. and Robert W. Vahlberg, Architects



Shown above, the south wall is planned on a 4-ft. module; the north wall is 10-in. cavity brick. Roof is framed with built-up wood trusses, the finish ceiling being applied directly to them

Left: the living room, looking past main entry to bedroom hall; beyond which future bedroom space may be added, see plan

Residence of Mr. and

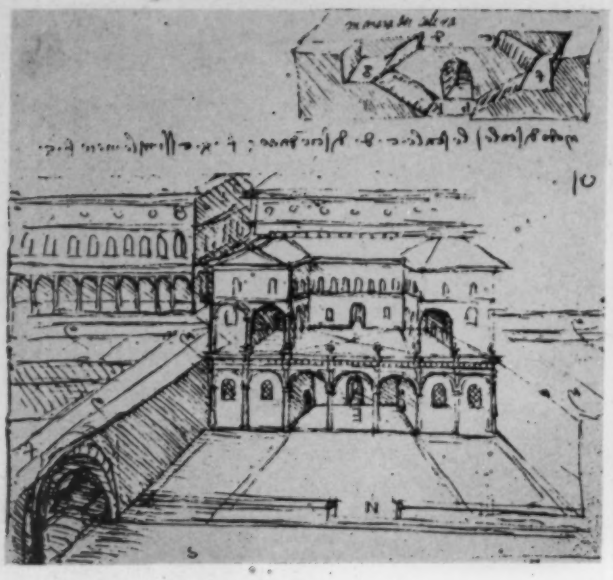
Mrs. H. Barney Crawford,

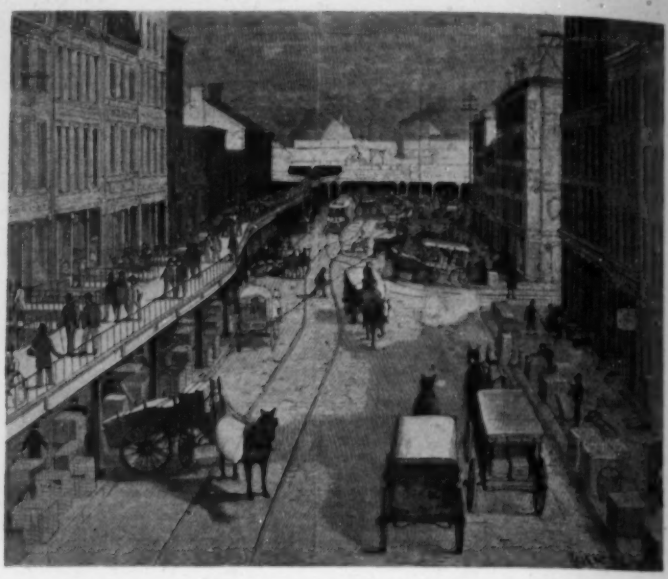
Oklahoma City, Okla.

Right: with the exception of the chimney, sliding sash occupies all of the south wall of the living room. Ceilings over the living area are striated plywood; elsewhere smooth plywood. Interior wall surfaces are plywood and common brick

Left: breakfast bar is practically outdoors when sash is moved aside. Well-ventilated kitchen has divided door at end opening on breezeway. Floors are waxed red concrete

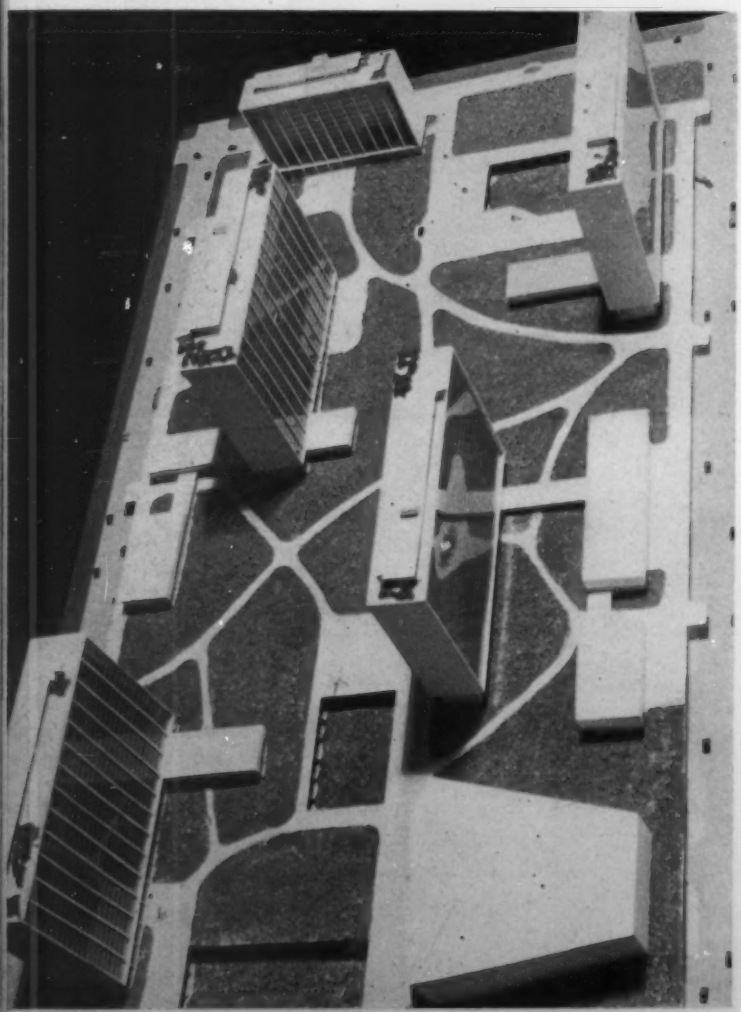
Leonardo's 15th century two-level scheme, and an 1890 proposal for a separate pedestrian level for New York's commercial district





The Bettman Archive

THE POSSIBILITIES OF TWO-LEVEL SUPERBLOCKS



For centuries men have been intrigued with the idea of bettering traffic conditions and improving cities as places to live and work by segregating pedestrian from vehicular circulation. Leonardo da Vinci proposed such a scheme in the 15th century, and its modern counterpart, shown here, has been developed by Walter Weissman and Robert Greenstein in connection with an architectural thesis at Pratt Institute, Brooklyn, N. Y.

Leonardo pictured streets on two levels (his sketch, above left), the upper level for pedestrians, the lower for carts and animals, and deliveries to houses. The streets were to be 660 ft. apart, thus in effect creating a pattern of superblocks within the city.

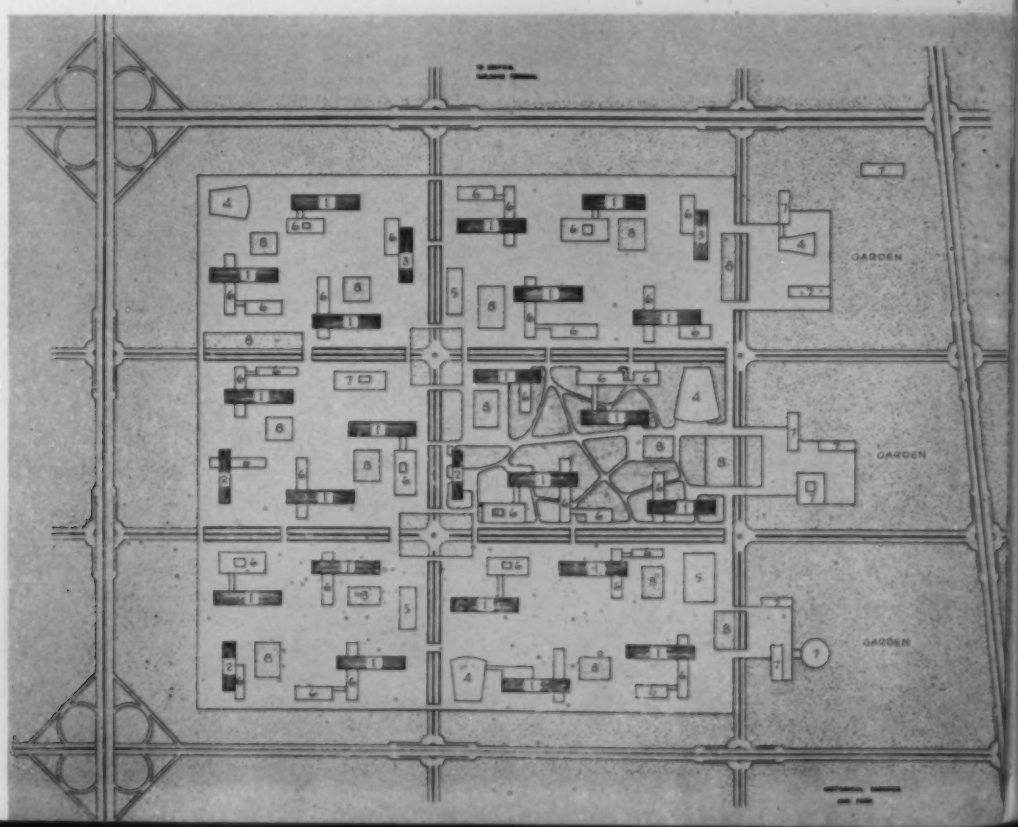
Similarly, the accompanying study of city and site planning proposes the segregation of pedestrians, vehicles and services, but related to present day tempo, needs and conditions. It is designed to alleviate the well-known faults of cities — traffic congestion and confusion, inadequacy of loading and parking facilities, indiscriminate land use (with consequent blight), lack of light and air, the nuisances of smoke, noise, dirt, and squalid ugliness.

Grasping the "sorry scheme of things entire," the study creates superblocks in which the commercial area is set aside from other areas by green belts through which run high-speed super-highways, a large-scale treatment based upon fast transportation and unobstructed views. Access to each area is provided by clover-leaf and circle-type intersections from the highways to the access streets based upon a diminution of speed and scale. These streets divide the area into a number of superblocks averaging 900 by 1500 ft. based

upon a pedestrian scale of space and time within each superblock. The areas immediately adjacent to the central business district might well be high-density residential areas for its workers.

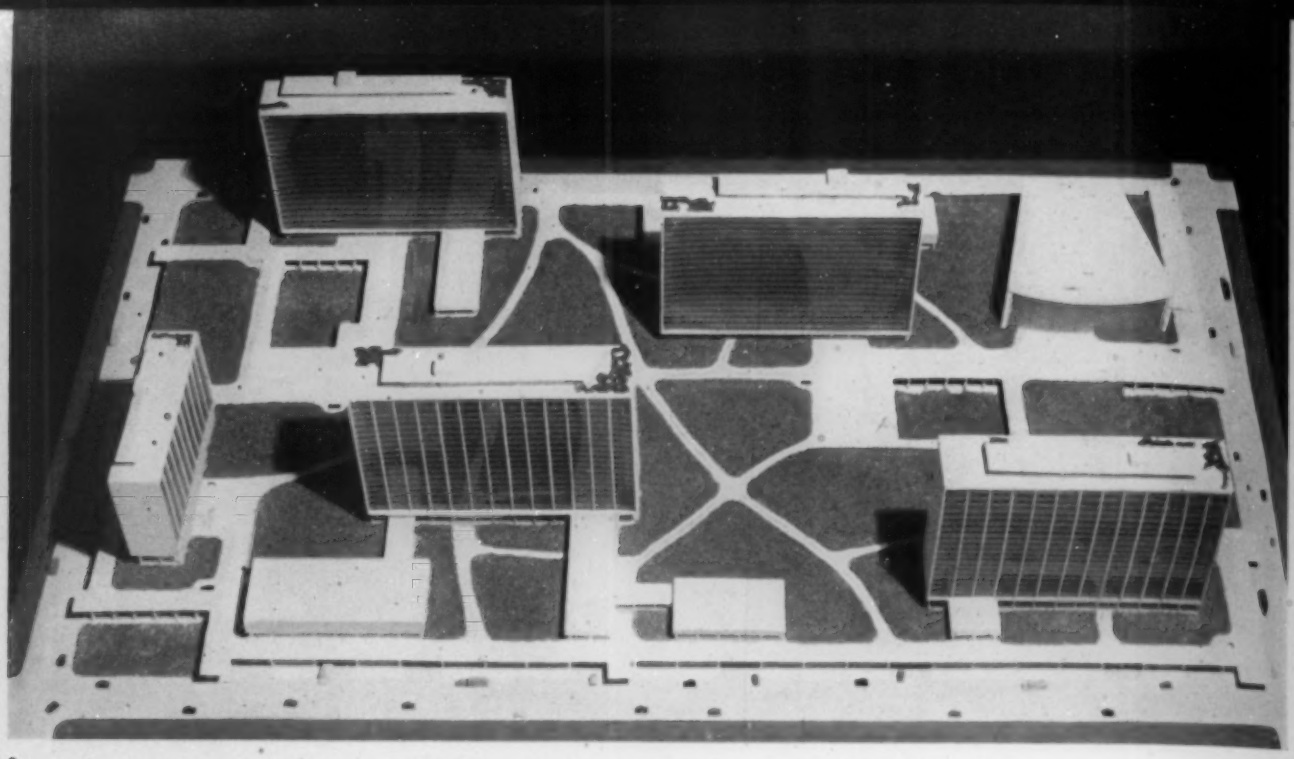
Each superblock is planned to have two levels, to provide segregation of pedestrians and vehicles. The upper level contains a number of commercial office structures of varying types, set in a garden-like plaza treatment of open spaces, and spacing is based upon a pedestrian scale of movement within each superblock. The structures have been designed as free standing elements spaced asymmetrically to create an interesting composition of related masses and contrasting spatial volumes within each superblock and through all the superblocks, coordinated as a unit, so that the entire area could form a visually pleasing silhouette from any part of the city. The pedestrian paths were designed in a non-axial treatment to emphasize the concept of free standing buildings, equally important from all views. Besides office buildings, supplementary elements including hotels, restaurants, shops, department stores, exhibit areas, etc., have been provided to form an integrated area both as a business center and as a recreational and social unit for use throughout the day.

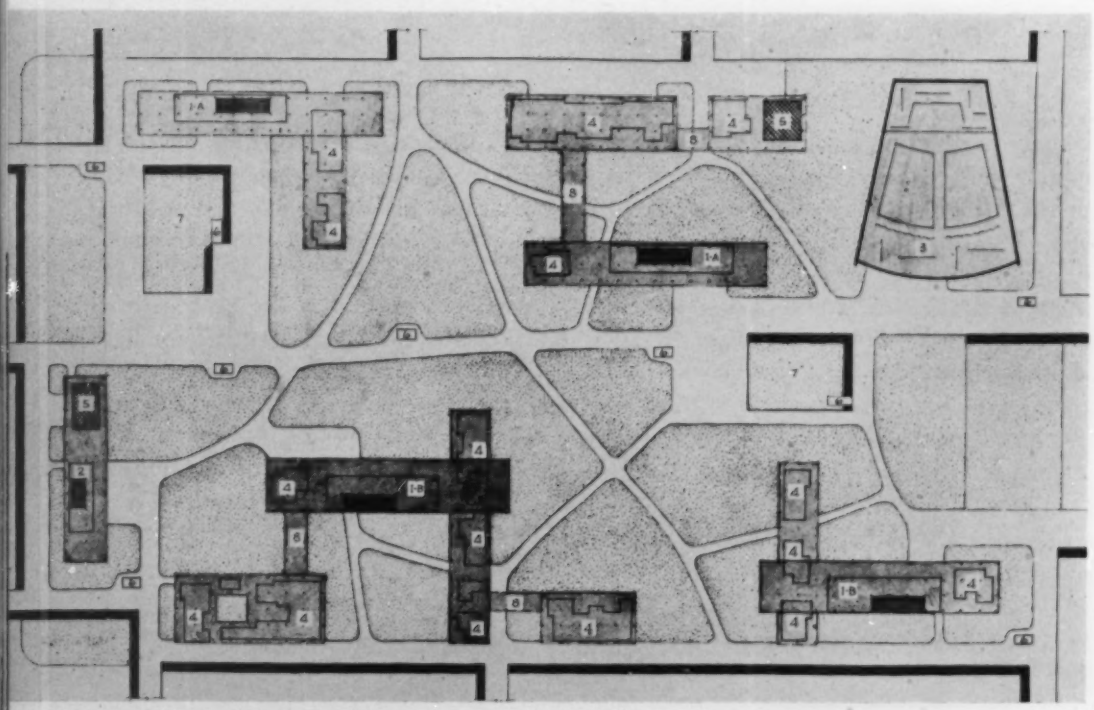
Above, a view of the model designed and constructed by Weissman and Greenstein showing the central unit of the superblock from the south looking directly north



1. **Office building**
2. **Professional building**
3. **Hotel**
4. **Theater**
5. **Department store**
6. **Shopping units**
7. **Special purpose building**
8. **Penetrations between levels**

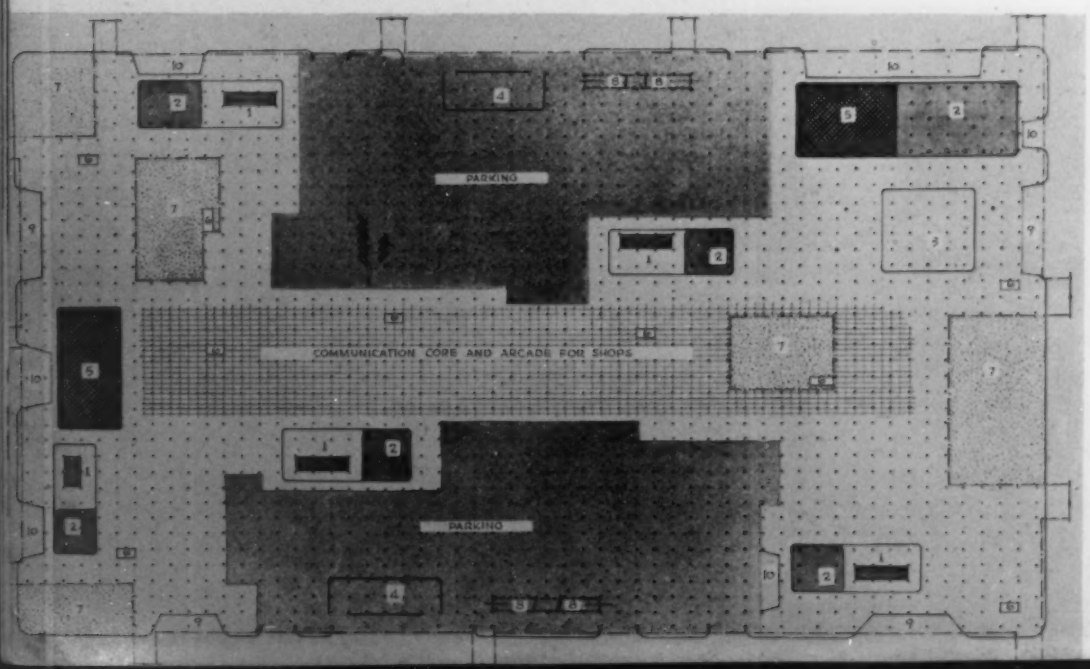
PLAN OF OVERALL SITE





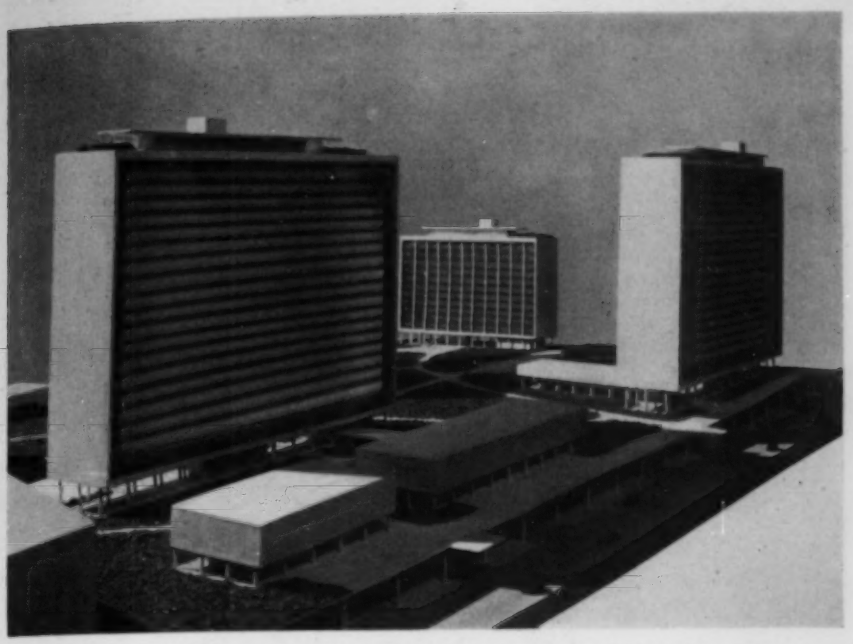
1-A. Office building—Cantilever type
1-B. Office building—Standard bay type
2. Professional office bldg.
3. Theater
4. Shops
5. Service distribution element
6. Stairway between levels
7. Garden penetration to lower level
8. Arcade

UPPER LEVEL



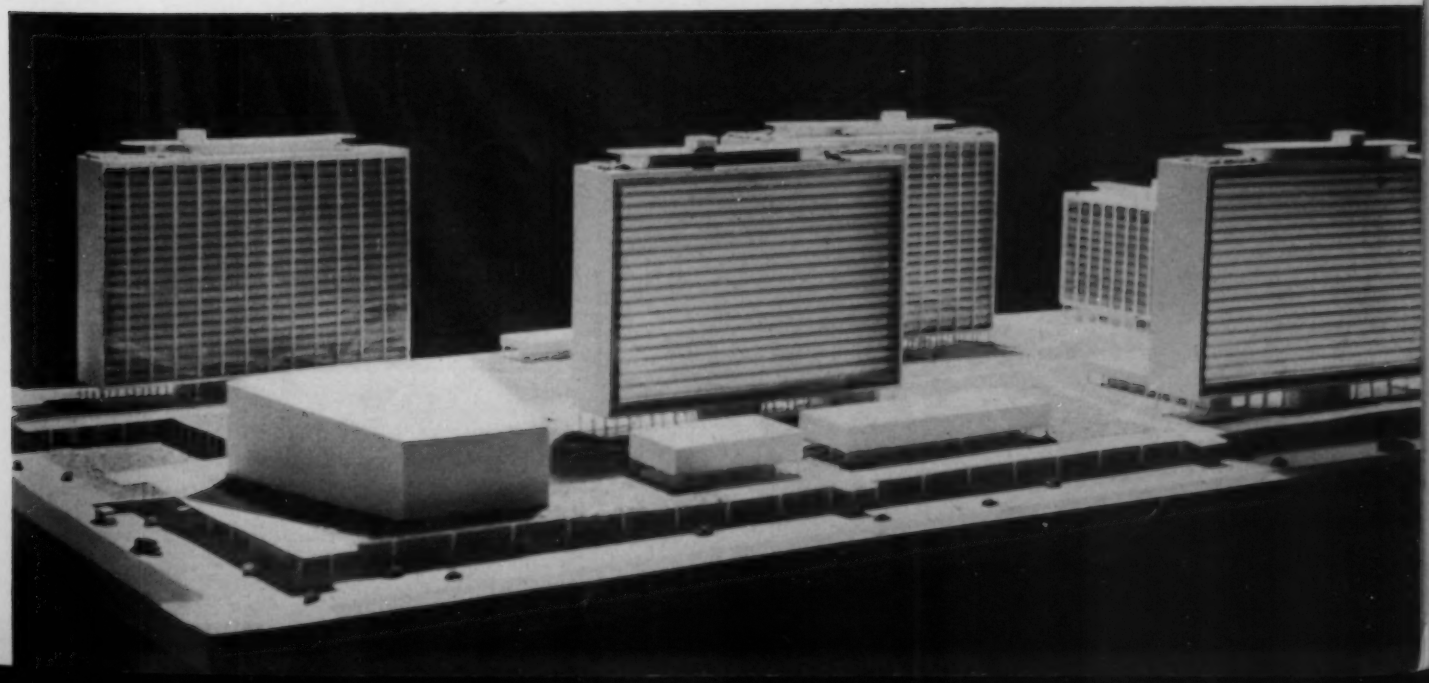
1. Office building lobby
2. Building storage & services
3. Theater lobby & lounge
4. Service station
5. Service distribution
6. Stairway between levels
7. Open green areas
8. Possible ramp to a lower level
9. Off street bus stop
10. Off street loading bays

LOWER LEVEL



The entire superblock is based upon a structural module of 24 by 28 ft. bays throughout all building units and platform framing, providing a repetitive structural rhythm and creating a definite harmony and relation between all elements and the spacing between them. This overall module is further divided into a 4-ft. module within the structures to afford flexibility of subdivision and to make prefabrication possible

Parking areas, services, utilities and a core of communication are at ground level. In the communication cores, which provide direct access to office buildings above, are shopping arcades and transit stops, subway or bus. Unloading of goods is in off-street bays through a centralized distribution service. The entire space is flexible and areas may be allocated for specific use according to needs. No analysis of the economic feasibility of such a scheme as this has as yet been prepared, nor has there been any program suggested for adapting this type of development to any existing city in the United States



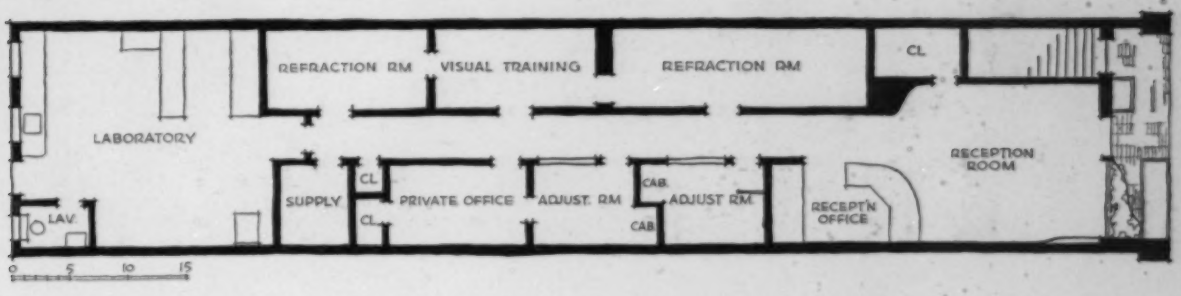
AN OPTOMETRIST'S SHOP WITH OPEN VISION

Wilmington, California — *Louis Shoall Miller, Architect*

AN optometrist's office naturally should be well lighted throughout in keeping with "Better light, better sight." By day or by night the shop designed by architect Miller is attractively lighted. The recessed entrance is open and inviting as well as distinctive in its simplicity and in the nice choice and use of materials. Brick is particularly well used, both for floor and walls within the building line. The glass show case is adequate and effective for showing the small objects to be displayed, and it serves also as a screen for people sitting in the waiting room, as they can still look out without being the objects of attention. A small planting strip adds color and a more friendly, intimate character to the entrance. The low display case will be noticed by those who may be using the upper floors though its sharp protruding corners must be avoided.

Floyd Ray Photos

The cove-lighted reception room is inviting and comfortable. Utterly simple in design, it gains its character from the warmth of the V-jointed Philippine mahogany paneling, simple wall covering and soft, quiet carpeting



The lot is long and narrow and for the optometrist's purposes the plan is divided into small functional rooms on either side of the corridor which leads ultimately to the laboratory. The reception office is well placed for directness of control

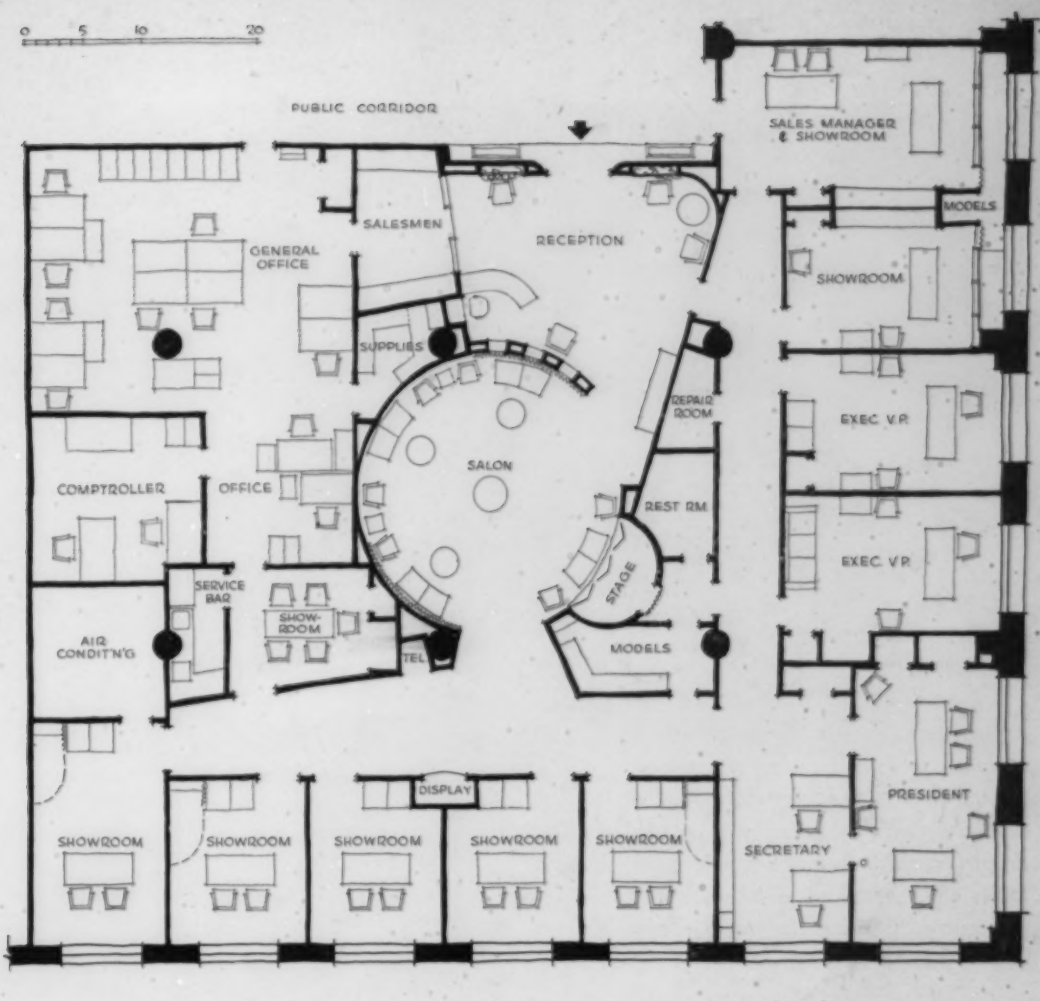
Ben Schnall Photos

OFFICES AND SHOWROOMS WITH A SPECIALTY SHOP AIR

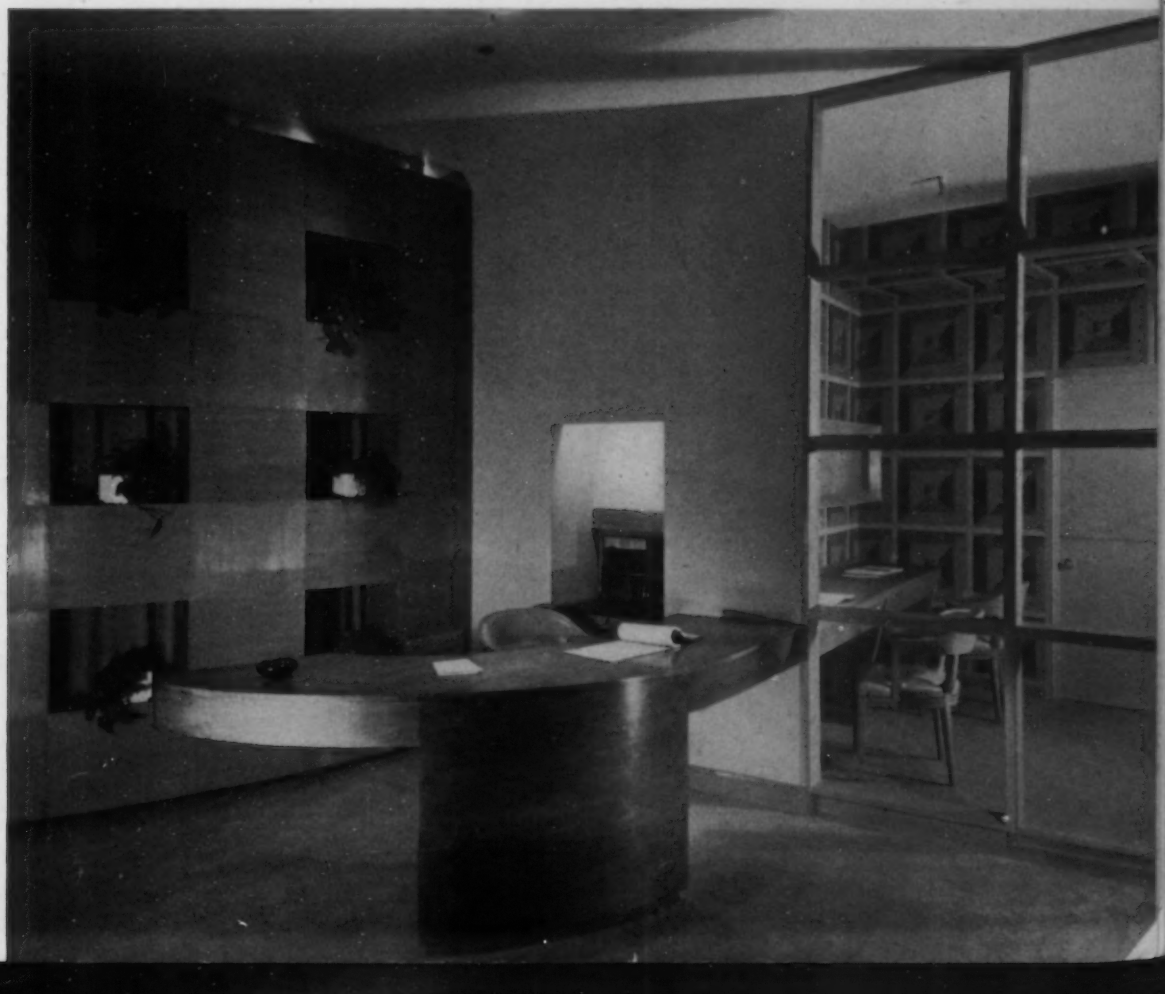
Lily of France Corset Company, New York City

Leon and Lionel Levy, Architects

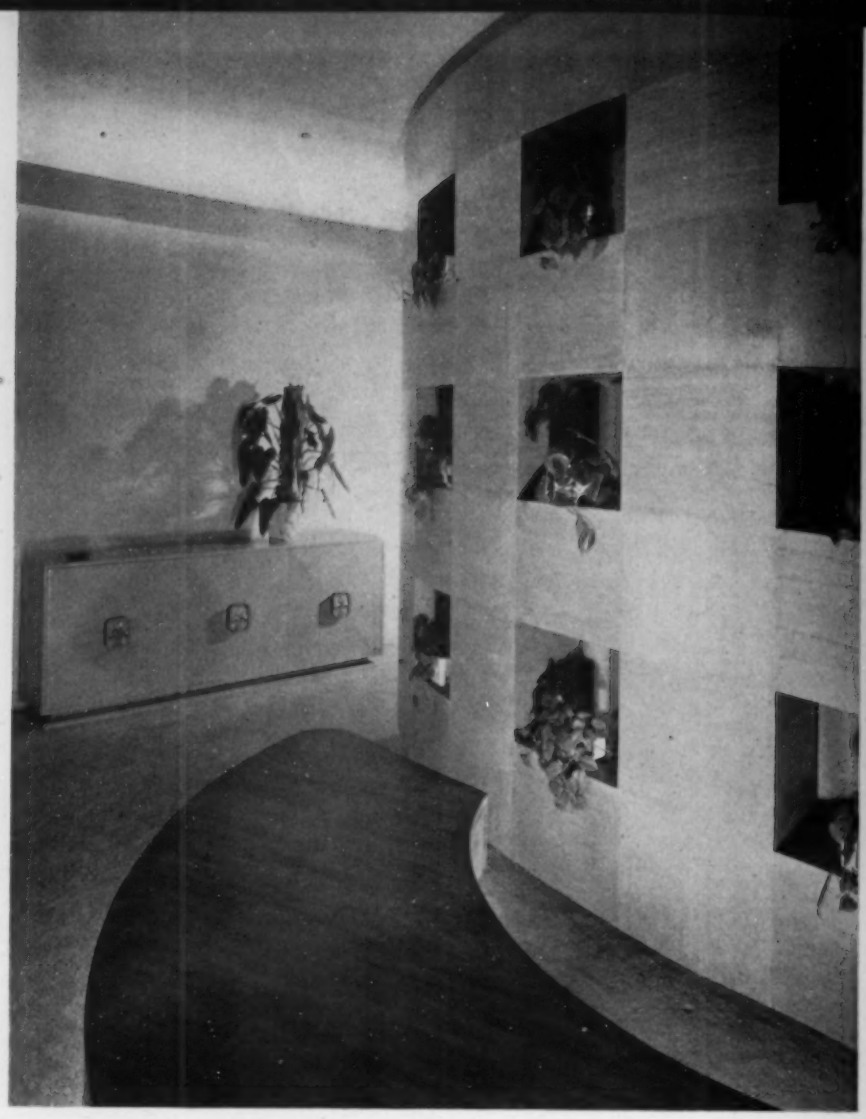
A SPECIALTY shop atmosphere and an unusually compact plan characterize the new headquarters of the Lily of France Corset Company on the fourth floor of a midtown Manhattan office building. The former is achieved through such nice detail as the main entrance (seen above), the latter by grouping offices and small showrooms around a large circular salon which, logically enough, forms the heart of the suite. The entrance is set back from the public corridor much as that of an exclusive small shop might be from the building line, and the wide double doors are given a distinctive air by antique mirrored panels. Plants and flower boxes are used throughout to lend a vivid accent to the predominantly delicate colors of the decorative scheme.



Chief design problem faced by the architects was the economical use of the square floor area, since offices and showrooms had to be both numerous and of varying size. Below: a corner of the reception hall, looking toward the salesmen's room. The partition at right is for decorative purposes only, has no glass in panels.



Right: the curved plywood wall separating reception hall and salon is pigeon-holed for the decorative value of plants against the beige background. Niches can also be used as special display boxes if desired

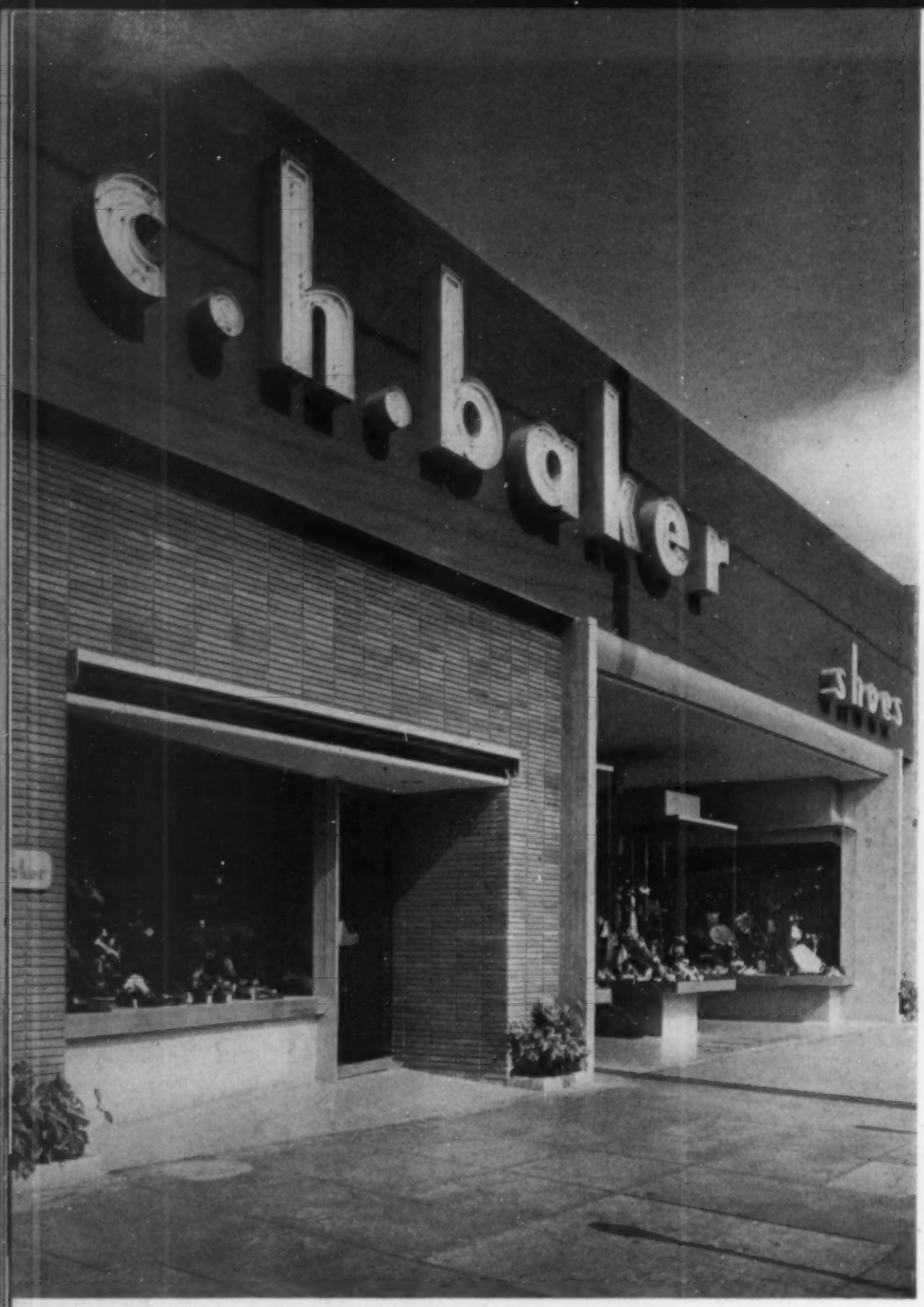


Below: the circular salon serves both as reception room and as main showroom, has a built-in stage for fashion shows (left of photo), which connects with models' dressing room. Draperies are pale green, tables of ebony edged with gold, chairs and couches upholstered in green and beige

Ben Schnall Photos

Above, left: one of the vice presidents' offices has light green papered walls and beige carpets, mahogany furniture. Above, right: the president's office (see plan, page 129) has a large conference table at one end; walls are walnut flexwood, draperies are hand printed. Right: one of the small showrooms, furniture and wood trim are bleached walnut, the Chinese-motif wallpaper is green

The smaller offices and showrooms, one of which is seen at left, are arranged around the periphery of the central salon. All decorated differently, they are tied together by Chinese accents and bleached walnut furnishings. Specially designed glass partitions conceal the building's exterior curtain wall



There can be no mistaking which of the two shops is for men and which for women. The Roman brick facade and single show window of the former are sturdily masculine, the arcade and individual show cases of the latter are undeniably feminine

Gruen and Krummeck—

Victor Gruen, Architect

WHERE ONE STORE EQUALS TWO

C. H. Baker Shoe Store, Glendale, Calif.

SINCE men purportedly are shy about passing through ladies' hosiery and bag departments to reach their own bailiwick, this shoe store catering to both men and women has been divided into two entirely separate shops, each specifically designed for its own clientele. Each has its own entrance and its own character. Roman brick forms the exterior of the men's shop, with display limited to a single large show window. The women's store features an arcade with Travertine walls and individual rectangular show cases, and a glass wall at the end of the arcade opens up a view into the interior. Inside, a partition firmly separates the two, and as far as the customer is concerned the departments are independent units. The service facilities, however — stock rooms, wrapping desk, etc. — are so placed that they serve both sections.

A good view of the women's salon (below) is provided passersby by the glass wall at the end of the arcade (right). Walls in this section of the store are dusty rose, chairs are covered in dark green, and carpeting is in a medium green

Julius Shulman Photos

Chairs in the men's shop (left) are covered in maroon plastic; walls are light ochre, carpeting is a medium green. Below: another view of the women's salon. Service facilities are used jointly by both sections

Julius Shulman Photos

OFFICE DISPLAYS NOVEL IDEAS

Functional, decorative uses of glass and space utilization featured

VERY much in evidence — and where more appropriate? — are the functional and decorative uses of glass in the recently designed public relations offices of Libby-Owens-Ford Glass Company in Toledo, Ohio. Besides the display of glass, the office layout, planned by H. Creston Doner, director of design, features efficient space utilization which provides for convenience and an attractive appearance.

Application of glass is first noted at the main entrance to the offices from the building corridor where two large glass doors are fitted with a special transom suspension arrangement so that there is no bar above the doors — only glass from floor to ceiling. Sides of the entrance are of gray structural glass as is the ceiling in which lights are set flush.

Portions of the corridor wall employ a transom effect for ventilation. All the way across the top of the door and wall section of several offices is a fixed transom of clear plate glass — appearing almost invisible to a person outside looking in. The wall section is pivoted at the bottom and swings inward 4 in. at the top to allow air to circulate around both sides and top in case the door is closed. The glass wall sections at the same time let daylight into the corridor.

An ingenious demountable wall partition, an invention of the director of design, is comprised of wood framing and locking members holding large sections of glass panels, and has been set up between two of the offices. This type of wall partition can be put up or taken down with a hammer and screwdriver.

The offices are relatively free of any storage. Files and storage space are located in an inside corridor which permits people to communicate between offices without going out into the main building corridor. The cabinet work is all built in and is designed to accommodate standard four-drawer files.

The office of the director of public relations provides an especially convenient arrangement for showing motion pictures and slides as well as for displaying charts and other materials in making presentations. A *cabinet* wall at the back of the office contains the motion picture and slide equipment, and has hinged doors on both sides so that projection equipment can be operated from outside the office and stored material removed without disturbing office occupants. Cabinets behind the desk have folding panel doors which are used for display material, and a movie screen pulls out from behind the cabinet.

Lighting is by fluorescent tubes on the ceiling in channels of satinol finished glass. Cabinets for magazines and other files have concealed lighting.

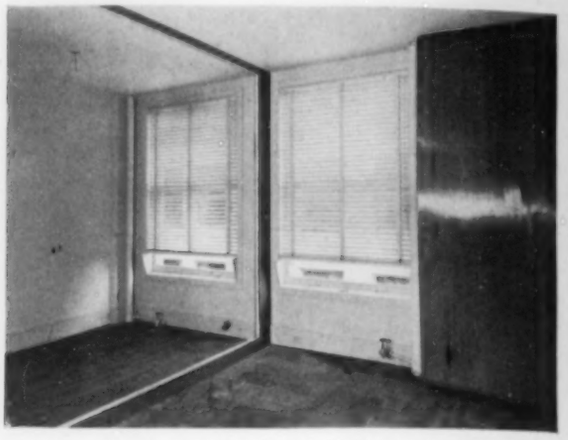
At the end of the inside corridor is a floor-to-ceiling mirror used to give an illusion of depth.

The main woodwork for doors, partitions, trim, desks and furniture has a bleached walnut finish, and the principal wall color is a warm-light shade, described as being slightly pink. This same color was used for window frames, baseboards, venetian blinds, ceilings and walls. Carpets are green, as is the leather upholstery — the leather is a slightly lighter shade, however. Sound-proof wall and ceiling in the office of the director of public relations is gray and reflects some of the green tint of the carpet presenting a very pleasing effect.

These offices are in a building more than 30 years old and all work was arranged so as to use existing facilities and space for maximum effectiveness and comfort.

Entrance to public relations department has doors and transom of tempered glass flanked by gray structural glass. Transom is supported at corners only, in new construction method, making transom bar unnecessary; sides and top of transom are recessed into the wall

Harold E. Waltz



1

Demountable partition can be put up or taken down with a hammer and screwdriver. First step (1) is the installation of the filler strip which is located between the windows

2

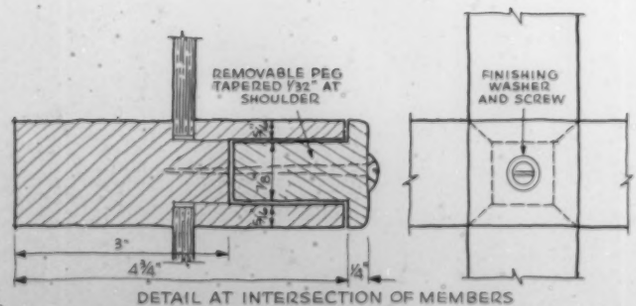
After filler strip has been installed, main vertical and horizontal cross members are put in place and secured (2)

3

Glass panels are set into rabbets in vertical and horizontal main members (3); edge of glass is protected by strip of masking tape. No putty or glazing stops are used. Glass is secured when tapered wedges (see drawing) are inserted into the intersections of vertical and horizontal locking members and fastened, holding glass in place

Partition is shown as completed in (4). These partitions can be erected, taken down and moved as the need arises

4



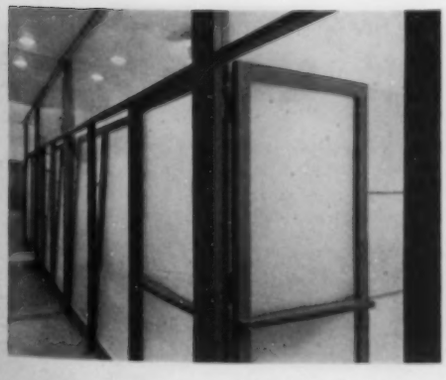
DETAIL AT INTERSECTION OF MEMBERS

Office for director of public relations has large panels behind desk for displaying charts and other materials. Panels fold together, forming doors to a cabinet. Movie screen pulls out from behind cabinet and occupies space in front of right hand window. Center of light fixture contains sound equipment for movies and recordings

Harold E. Waltz Photos

Wall of cabinets faces desk in office shown above. Cabinets contain motion picture and slide film equipment plus other material needed for presentations. Storage wall has hinged doors on opposite side so that projection equipment can be operated from opposite side without disturbing the office occupants

Lower right: advertising office where inquiries are answered. Custom-built cabinet, fixed with sliding doors, contains printed matter. Doors and panelling are finished in gray walnut to match desks. Below: interior corridor receives daylight through glazed partition. Lower panels are pivoted at bottom and swing in about 4 in. at top to permit cross ventilation



ELECTRIC RADIANT HEATING SYSTEMS

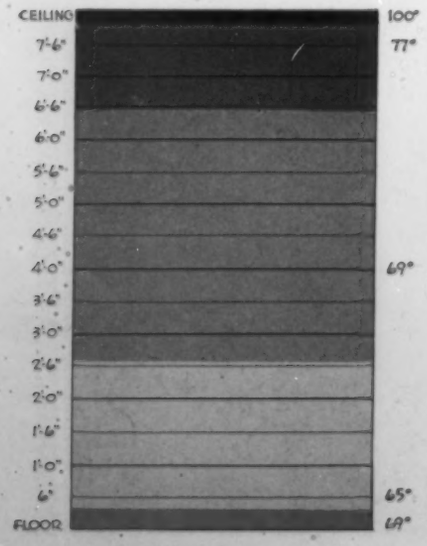
Several types now available for radiant panel installations

WHEN radiant heating became popular it was only natural for methods to spring up using electricity as the energy source, especially for application in mild climate, low power cost areas.

Although electric radiant heating panel systems are still, admittedly, a luxury item for many sections of the country, manufacturers are enthusiastic for what they claim to be the most ideal approach to maintaining comfort during the heating season. It is possible to have a radiant heating system that responds quickly to heating demand, is "zone" controlled and convenient to operate; at the same time the architect can provide for more living space and has more freedom of design. Electric radiant heating also readily lends itself to installation in the ceiling which most nearly qualifies as a "true radiant system" (almost ¾ of heat emitted from a ceiling panel is radiation, while for a wall it is less than ⅔ and for a floor about ½). Thus, according to enthusiasts, electric radiant heating can permit the most responsive, most comfortable heating system in a luxury-type installation.

In addition to being competitive with other fuels for complete heating where power cost is about one cent a kilowatt hour * and/or where the heating season is of short duration, electric radiant heating may find economic application where initial cost is more important than operating cost; for heating rooms used only occasionally; and as a supplement to existing residence heating systems where quick heat is desired, as in bathrooms, recreation rooms, nurseries, etc.

Temperature gradiants in room heated with ceiling radiant panel; note warm floor due to absorbed radiation. Electrical systems are easily applied to ceilings



ADVANTAGES AND DISADVANTAGES

All electric radiant heating systems have certain advantages in common. The elimination of a central heating plant, fuel storage, and chimney, together with ducts or pipe, valves and pump, reduces the initial cost and saves space. There are practically no maintenance costs. Operation is clean, noiseless, and little attention is required from the occupant other than occasional adjustment of room thermostats. Individual room or "zone" control of temperature is possible by placing one or a number of electrical circuits under the control of a single thermostat.

An advantage not common to all systems is that of rapid panel response to outside air temperature change and in heating up from a cold start to operating temperature. The ability of a radiant heating panel to change surface temperature naturally depends on the mass it has to heat; thus a light panel of low thermal capacity is more readily adjustable to changing heating loads. Some thermal capacity, however, is advantageous in that an on-off thermostat can be used to maintain a practically constant surface temperature with a steady heating load. Electric radiant heating panels can be designed light when the conductive element is placed near the radiating surface and is insulated from the rest of the structure.

The prime disadvantage is, of course, the cost of electricity. It does not seem likely that power companies will be prone to offer special rates for space heating for several reasons: (1) heavier lines must be installed; (2) substantial revenue is received only during the heating season, while lines must be maintained year around; (3) electric panel systems represent a steady, not an off-peak load. Power companies, in some instances, have increased their rates for space heating.

The various types of electric radiant heating systems known to be manufactured are:

1. Small resistance wire incorporated in a thin dielectric fabric or embedded in a "sandwich" panel.
2. Heating cable either insulated (⅛ in. dia.) or uninsulated (½ in. wire rope).
3. Conductive rubber panels.
4. Tempered glass which has an aluminum alloy conductor fused on one side.

RESISTANCE WIRE TYPES

Fine-wire resistance units have been designed for low-, medium-, and high-temperature service, by Richard Crittall & Co. Limited, and have found wide usage in England and Europe, with commercial practice reported for 14 years.

The patented low temperature radiant system, called *Dulrae*, consists of a flexible, dielectric fabric (less than 1/16 in. thick) which incorporates nichrome resistance wire as the heating element. This fabric is usually installed by placing it between layers of plasterboard which serves to diffuse the heat and produce a uniform surface temperature; the resulting panel is normally fastened to the ceiling.

Dulrae is made in rolls 100 yds. long by 24 or 48 in. wide. Stranded copper "bus bars" run longitudinally along each edge and the resistance wires (laid in a sinuous pattern) are connected in parallel across the bus bars at intervals of 2 ft. The bus bars are looped at each 2-ft. interval so that the fabric can be cut at any length in multiples of 2 ft. up to a total length of 16 ft.; the bus tabs then can be pulled out for connection to the power supply.

Because of the low temperature used with *Dulrae* (radiating surface usually between 80–90 degrees) it is said that the possibility of wire failure is remote, but if a wire should break, only one panel section 2 by 2 ft. or 2 by 4 ft., depending on the size of the fabric used, becomes

* *Various sources set this value from ¼ to 1½ cents per kilowatt hour with one manufacturer reporting operation at 1 cent on par with No. 1 oil at 7 cents per gallon.*

inoperable. None of these systems has been installed as yet in this country, but test installations have been planned for the purpose of getting approval of Underwriters Laboratories.

Medrae, the medium temperature source, is frequently applied in the form of dado panels 3 ft. long by 2 ft. wide which are usually mounted away from the wall on brackets to permit air circulation behind in addition to radiation from the front face. The panels are also applied to walls with no air space behind, applied to ceilings where the height is at least 10 ft., or suspended from the ceiling — mainly for commercial and industrial uses where appearance isn't of prime importance.

Medrae panels are constructed of a non-deteriorating, resin-bonded asbestos material, approximately ¼ in. thick, in which element wires are embedded and mechanically and electrically protected in the manufacturing process. The material is of a laminated nature, said to possess considerable mechanical strength. Surface temperature is normally about 160° F. These medium-temperature panels are suitable for both domestic and commercial buildings.

Where local radiant warmth is desired at cold "spots" and not general warmth throughout a residence or office building, the high temperature element, *Hirae*, can be satisfactorily used. These radiant spot heaters have the resistance wire heating element contained behind a metal front in a "framelike" construction. Maximum surface temperature is approximately 500° F. They are not suitable for recessing into the plaster of walls or ceilings, but are intended to be mounted at a high level on brackets from the wall or suspended from the ceiling, if high enough; if located too close to occupants discomfort may result from the high intensity irradiation; therefore *Hirae* panels are most suitable for industrial use. At the other extreme, improper adjustment (focusing) may fail to provide adequate thermal comfort even though the design is considered adequate.

HEATING CABLE

Insulated Type

Probably the greatest number of electric radiant heating installations in the United States have been designed to use a small insulated cable originally developed for soil heating — for greenhouses and similar applications. In 1940 the L. N. Roberson Co. of Seattle, Washington began to investigate the possibility of installing the cable in plaster, and now they are reported to have over 1000 installations in the Pacific Northwest and other jobs scattered as far as Bar Harbor, Maine, and San Francisco.

The *Heatsum* cable is installed in a variety of ways in ceiling, wall plaster; over existing ceilings; and in concrete slabs to provide a low temperature panel system. This cable is approximately ⅛ in. in diameter; and the insulation is said to be a waterproof, oilproof, extremely slow aging, heat resistant and high dielectric strength material.

Cable is laid in a sinuous arrangement; the spacing between turns depends on the heat loss designed for and the area of the surface to which the cable is to be applied. The cable is available in various lengths with some lengths designed for 110 v operation and others for 220 v. Once the heating load for individual rooms has been calculated by conventional methods, this load is translated from Btu into watts, the correct length cable corresponding to the load is chosen and the cable arrangement is figured to give equal spacing on the applied surface.

Plaster Installation

Where plasterboard or similar lath is used, the element is secured to the surface every two feet with insulated staples or by loops of asbestos cord around the cable which are attached to the plasterboard by a stapling machine. Plaster is applied in the usual manner.

If metal lath is used, it must be first covered with the scratch coat of plaster. The cable is then secured to the scratch coat with adhesive tape, patching plaster or plaster of Paris. Plastering is completed with the usual brown and finish coats. Installations have been made over existing plaster ceilings by the use of a type of plaster that will bond to the old surface.

The plaster should be allowed to dry for one week in summer and two weeks in winter before the heat is turned on, and then the rooms should be brought up to temperature slowly at the rate of four degrees rise per day. Any time the temperature in the house is allowed to drop below 50° F, the rooms should be brought up to temperature slowly.

The cable serves as reinforcing over plasterboard joints; the use of metal reinforcing where it will be crossed by the cable should be avoided in order to prevent the hum that is occasionally generated in the reinforcing while the current is on.

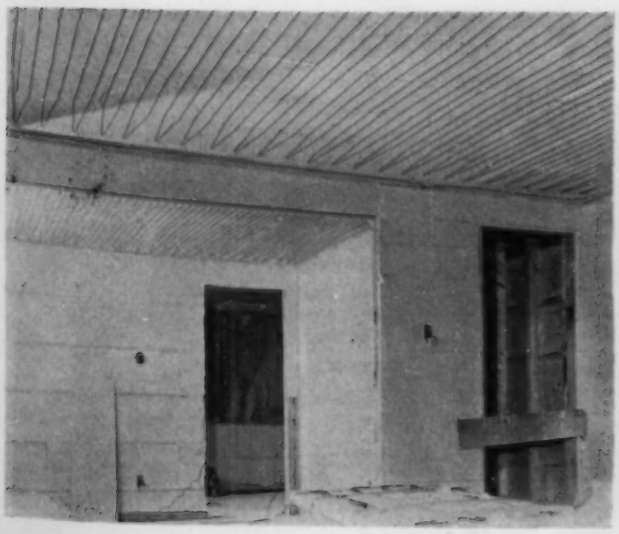
Concrete Floor Installation Procedure

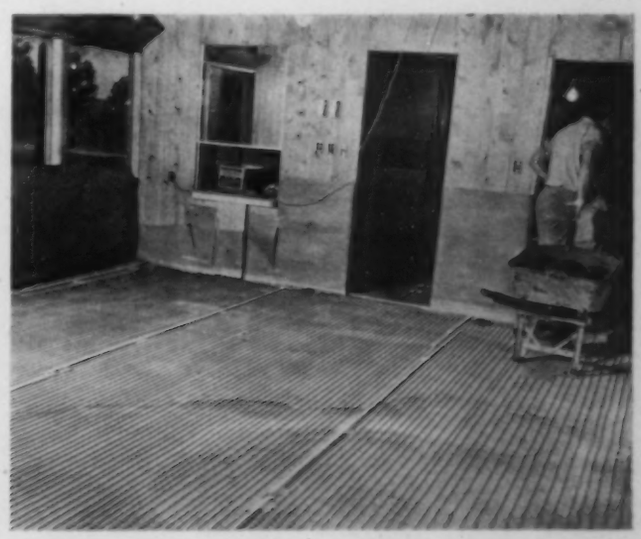
For concrete slab construction, the cable can be installed in one of two ways. The first method consists of laying most of the slab (about 3 in.) and fastening nailing strips on the top to which the cable is stapled. The slab is then finished with a 1⅝ in. topping of cement.

For monolithic pour, the nailing strip is omitted and the cable is strung on a wooden frame with nail spacers. As soon as the first three inches are poured and roughly levelled off, the frame is placed on the floor. The pouring is immediately continued with the final inch being laid. When sufficient concrete covers the ele-

Small, insulated heating cable is stapled to plasterboard in ceiling system and to concrete for floor type before finishing off surface.

Kenneth S. Brown Photos





ment and holds it securely, the frame is slipped out and the surface finished. Care must be taken that none of the turns be allowed to touch, and the circuits should be tested immediately.

When magnesite flooring is used, the underlayment or scratch coat is poured first, the heating cable stapled to it, and then the finish coat poured. The same procedure is used for a slab which contains insulating concrete; cable is stapled to the "insulating" layer and covered with a cement topping.

Costs

According to the Roberson Co., the installation cost is about one-half that of a hot water radiant heated system. The cost of heating cable and thermostats is said to average 3.25 cents per cu. ft. and the completed job installed averaging 7.5 cents per cu. ft.

In the Seattle Area, with electricity averaging one cent per kwhr, the operating cost was reported on a par with No. 1 oil at 7 cents per gallon. The actual bills as obtained from the power companies on 13 Seattle houses for 1945 showed an average total power consumption of 2.36 kw per cu. ft. for the year, including lights, range and water heater as well as house heating. The houses were typical cases, including both well-insulated and poorly-insulated houses.

Plaster ceilings and walls are claimed to reach "comfortable" temperature from a cold start in about 30 minutes. The concrete floor with much more thermal capacity, requires about four hours to reach operating temperature and drops about 10 degrees when turned off at night.

The ordinary on-off thermostat is located 5 ft. above the floor in the room which it controls. Where practical the thermostat is located over the switch controlling the circuit and on an inside wall that does not contain the heating element. The presence of heating cable in the wall adjacent to the thermostat will cause erratic temperature control.

Stranded Cable

A slightly different approach in heating cable systems is the use of ½ in. stranded steel cable as the heating element. This method uses a high current, low voltage arrangement with a maximum of 70 volts being applied to the cable. Such a system permits the use of the low resistance stranded cable, which is said to produce an adequate amount of heat, make installation easy and to practically eliminate maintenance and repair difficulties.

During the course of experimental work conducted by the Tice Electrical Co., Monterey, Calif. to find a suitable low resistance conductor, a pilot installation was designed using steel reinforcing bars. These bars were welded together into a continuous single circuit and embedded in a concrete floor. A step-down transformer supplied predetermined voltage to this element with the control in a primary circuit. This installation worked, but was far from perfect.

The greatest difficulty encountered was an audible hum which persisted during the operating cycle of the system. Research revealed that a stranded steel cable would function more efficiently than steel bars and without the annoying hum. Based on performance tests, a special zinc-coated, ½ in. wire rope was chosen as having the most satisfactory characteristics for the high current, low voltage principle used in *Electradiant* heat, under which name this patented system is now marketed. In addition to electrical advantages, the cable is protected from corrosion by the zinc coating.

Most installations of the *Electradiant* system have been of the concrete slab or built-up-floor types. In the former, back fill is prepared as for a normal concrete slab floor — thoroughly drained, then stabilized with an application of oil, asphalt or other waterproofing. Four or five inches of lightweight insulating concrete is poured directly over the fill and allowed to set for two or three days for proper curing; the wire rope is stapled in place directly onto the aggregate. Finally, the top slab, which may be from 2½ to 4 in. thick, is poured. A complete *Electradiant* heating system in an average home of 1,200 sq. ft. can be installed, according to the manufacturer, by two men in a little more than four hours.

In wood floor installations, floor joists are positioned 2½ to 3½ in. below what would be the normal level of the floor. A sheet of ¾ in. vapor seal material is generally laid over the sub-flooring, and wooden sleepers are then fastened on the vapor seal with glass fiber insulation between them. The next step is to secure the wire rope on top of the insulation with glass fiber lined straps. Clean, dry beach sand is applied in sufficient quantity to cover the cable fastening straps to a depth of not less than 1 in. before the top flooring is laid.

Supply specifications call for 220 volt service with secondary transformer voltages ranging from 20 to 70 volts depending on the total length of the cable. Power consumption varies from 10 to 15 watts per sq. ft. of heated area. Cable temperature during peak operation is slightly more than 110° F, with floor surface temperatures averaging between 70° F and 74° F. The transformer used in an average home is about 14 in. square by 20 in. high. According to the Electradiant Corp., the system, completely installed, costs on the average 30 per cent less than other types of central heating.

Popular installations for stranded steel cable are built-up wood floor or concrete slab. For wood floor, cable is laid on insulating sheet (left) and then covered with sand and flooring. For concrete floor, cable is stapled to floor slab (right) before final pouring

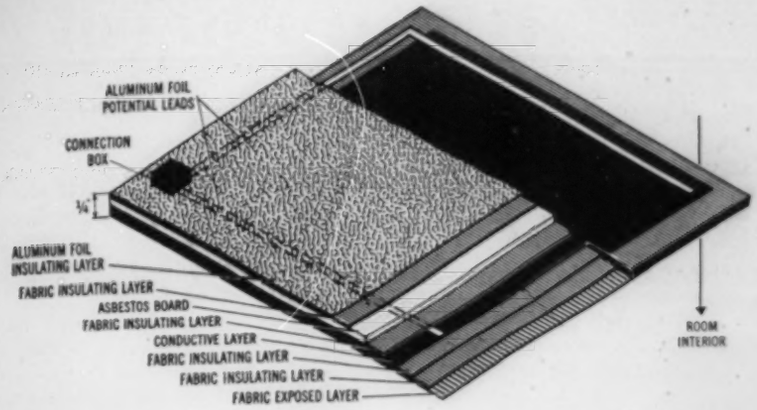
Left: Rey Ruppel Photo

CONDUCTIVE RUBBER PANELS

A new concept has been introduced with conductive rubber panels where especially processed rubber sheets, themselves, conduct electricity and liberate heat directly and uniformly over the entire surface of the panel. Although rubber is normally an insulator, the characteristic nature is reversed to make it an electrical conductor.

Uskon

Uskon panels made by U. S. Rubber Co. are of a laminated construction in which the conductive rubber sheets are sealed between layers of phenolic impregnated insulation. The laminated



Uskon panels have the conductive rubber sheet sealed between fabric layers and are made rigid with a backing of asbestos board; aluminum foil provides reflective insulation

construction is made rigid by a backing of 3/16 in. asbestos board. There are no electrical wires within the panel other than two aluminum foil potential leads to the conductive rubber layer. The panels are 4 by 4 ft. and 4 by 3 ft., and special sizes are available at a slightly higher cost to meet special requirements. The bonded assembly, when completed, is approximately ¼ in. thick, and presents the same appearance as standard interior wall boards. The 4 ft. dimension of the panels readily adapts itself for fastening to standard 16 or 24 in. joist spacing.

Uskon panels operate on 220 volts in two standard wattage densities — 17 w and 22 w per sq. ft. Heat output for these panels is 58 and 75 Btu per sq. ft. for the 17 w and 22 w panels respectively. The 220 v operating voltage is used to cut installation costs by reducing wire sizes, the number electrical circuits required, the size of control equipment and the amount of overload protection required.

Installation

In new construction the panels are nailed directly to the ceiling joists after the framework of the house is completed. The 17 w (58 Btu) per sq. ft. panels are used in rooms with normal heating requirments; the 22 w (75 Btu) panels are used in bathrooms, over-large window areas and in rooms with abnormally high heat losses.

A 2 in. nailing margin, containing no conductive rubber, is provided around each panel for nailing to the ceiling joists; standard nails are used to fasten the panels. For fastening the center of the panel a standard nail which is covered with a polyethylene sleeve is used. The insulated sleeve over the nail provides an extra precaution against grounding the nail to any steel or other conducting member within the building.

A desirable arrangement for the panels is a peripheral pattern with the center part of the ceiling being filled in with any standard building board. In small rooms of limited ceiling area, the panels are centered within the room. The entire ceiling of a room is not covered except in extremely small rooms or in rooms with abnormally high heat losses. The peripheral pattern is advantageous in that it provides a more efficient utilization of radiation than if the whole ceiling were to have been covered. The panels may be finished with paint, paper, plaster or fabric.

Panels are designed so that the surface temperature will not exceed 100° F at temperatures as low as 0° F outside. The ceiling heats up to maximum temperature in about 15 minutes.

When it is desired to plaster over the panels it is important that the plaster coat be kept as thin as possible. The panels have a low mass and any heavy coating applied over the panels reduces their sensitivity of response to outside temperature changes. A heavy coating defeats their prime advantage in having a short warming up and cooling off cycle.

Panels are connected in groups of parallel circuits. Five circuits are usually required in an average home. The total connected load to heat an average five room house is approximately 10 kilowatts, which is equivalent to the connected load for 1½ electric cooking ranges. The total current carried by any one heating circuit does not exceed 20 amperes.

Panels may be cut out for the mounting of lighting connection boxes if ceiling fixtures are to be used in the room. The peripheral pattern of installation usually results in the center ceiling fixture falling within the inactive center area of the pattern. However, when it is desired to locate a fixture within the active area of a heating panel, all that is required is that the edges of the cut-out panel hole and the fixture connection box be insulated from one another. This is usually accomplished by taping the edges of the hole with a commercial insulating tape.

Costs

The average installation cost in the normal residence for *Uskon* panels will approximate $50.00 per room.

A house located in Knoxville, Tenn., consisting of a living room, bedroom, kitchen, hall, bath and enclosed sun porch was designed using 46 panels; 26 were 4 by 4 ft. and the rest 3 by 4 ft. and 2 by 4 ft. The rooms were individually controlled.

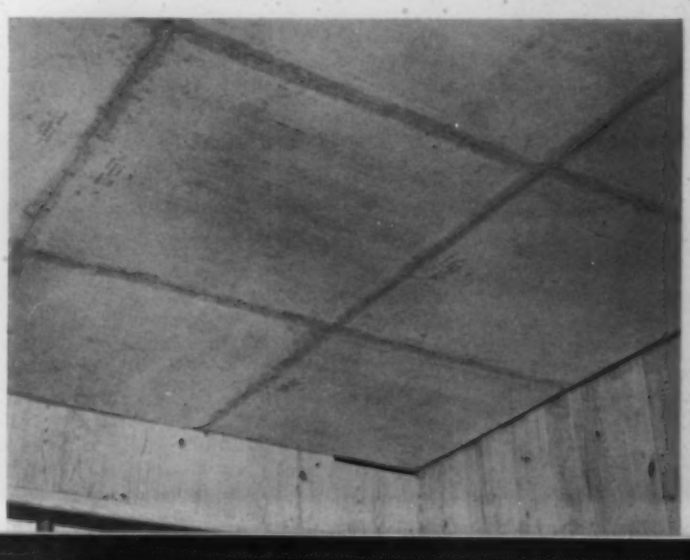
The house, 6384 cu. ft. in content, was well insulated as is demonstrated by the calculated heat loss of 23,400 Btu per hr. based on a design temperature of 0° F. The power consumption for one year's operation amounted to 9,766 kwhr, which excludes domestic hot water heating, at the cost of about $54.

Pliotherm

Another type of rubber panel, *Pliotherm*, developed by Goodyear Tire & Rubber Co., is constructed with the conductive sheet sandwiched between electrically insulating cover plies of rubber

Uskon panels are installed in the ceiling by fastening them to ceiling joists. They are placed in a peripheral pattern or in the center (for small rooms). Non-panel areas can be filled with ordinary wallboard

U. S. Rubber Company Photo



or rubberized fabric. The entire mass is bonded together in the manner of conventional "plied up" rubber articles.

Because stretching contributes to resistance rise, *Pliotherm* is constructed with a fabric reinforcing ply to limit this stretch. While this does not materially affect the flexibility of the heater, it does, of course, prohibit application to a compound curvature. Where this type construction is desired, the heater may be specially manufactured.

Any of the wide range of colors possible in rubber compounding can be used in the insulating outside rubber plies. But for practical purposes, best results are obtained by using black, dark brown, red, or green. At the present time, pastel colors and white are difficult to achieve and involve a considerably higher manufacturing cost.

Pliotherm lends itself to decorative and functional design. It can be easily combined with wall board, wood panels, rubber and plastic wall and floor coverings, moldings, etc.

The resistivity (1 to 2 ohm-cm) permits heating elements of practical size to operate on commercial voltages. Various designs have been installed for 24 to 28 volts (aircraft and commercial vehicle power plants); 32 volts (farm and railroad car); 115 and 220 volts.

Rather wide ranges of heat density (output per unit area) are obtainable. Heat output at any one operating voltage may be varied by suitable arrangement of the electric circuit and adjustment of the conductive layer.

Complete heating elements, ranging from .05 watt per sq. in. (7.2 per sq. ft.) to 10 watt per sq. in. (1440 per sq. ft.) have been produced in experimental quantities. Upper limits are dictated by the rapidity of heat dissipation possible under the conditions of operation. Present recommendations are that the temperature of the heating element should not exceed 150° F for prolonged periods.

Pliotherm is ordinarily made in sheet form, with a rectangular shape to provide a uniform heat output over the entire heating area.

Pliotherm has been manufactured in sizes ranging from ½ in. wide by 2 in. long up to sizes measuring 60 in. wide by 30 ft. long. Overall gauge is naturally determined by service requirements, but will ordinarily fall between 0.067 to 0.187 in.

Although tests have not been in operation long enough to be conclusive, experiments to date show that the aging life of *Pliotherm* can be expected to equal that of other rubber articles of comparable quality, used under the same conditions.

TEMPERED GLASS PANELS

A newcomer among the electric radiant heating methods, at least in this country, is a tempered glass panel which is heated by the electrical current passing through an aluminum alloy conductor fused into one face of the glass. It was developed by French glass makers for use in the Maginot Line where a type of heat was needed that would have no fumes, dust or explosive dangers. For domestic heating, a panel now marketed, 16 by 24 in., is set in an aluminum frame with a small air space behind the glass. The unit is suitable for wall installations with the air space providing some convection heat in addition to the radiation from the front face. The capacity of the panel is 1000 watts or 2.62 watts per sq. in. and operates at a surface temperature of 300° F. Either 110 or 220 voltages wiring can be used, but on 110 v not more than one panel should be used on a circuit.

A unique feature of the wall panel is that the glass may be lifted to a horizontal position to serve as a food warmer.

A larger glass panel, 16 by 48 in., has been designed for use under cars in garages during the winter to keep the oil, grease and engine warm. The clear, tempered glass has a compressive strength of 2000 p.s.i. to eliminate the danger of breakage.

The installation for a typical six room house is reported to be $344 plus labor using the 16 by 24 in. units. Sizes one-half and twice as large as the 16 by 24 in. unit are planned, and special larger sizes can be obtained if desired.

Underwriters Laboratory has approved the *Radiant Glass* heating panel; it has been subjected to various tests with one operating the panel at 70° below zero.

EXPERIMENTAL INSTALLATION

In a super-insulated test house owned by Carl F. Boester, housing consultant for the Purdue Research Foundation, an electric radiant heating system using aluminum foil has been installed. There are several heat pump installations in the structure and the electric resistance heating was designed first of all to provide an exact rather than an estimated heat loss, and secondly to serve as a cost comparison for electric radiant heating (qualified by a usage factor) with the heat pump.

For one type of installation, 0.00065 in. aluminum foil, 1 in. wide, is stapled to low density wood fiber wallboard which covers the ceiling. In a 12 by 20 ft. room the ceiling system was divided into two circuits, each circuit consisting of 400 lineal ft. of aluminum foil and covering one half the area, 10 by 12 ft. Each circuit draws approximately 20 amp at 110 v which is equivalent to about 7500 Btu per hr. Actually, the capacity of one circuit is larger than the heat loss of the room, but two circuits were used since quick heating was desired, making it possible to shut off the current when the room is not occupied. During continuous use, the ceiling doesn't heat to more than 140° F.

Walls and ceilings of another installation are covered with aluminum foil strips with the maximum design temperature 70° F for all surfaces. Different sized aluminum foil strips were used than for the ceiling installation previously described.

Aluminum foil panels can also be made by taking an ordinary sheet of 4 by 8 ft. foil-backed gypsum board and cutting the 0.00035 in. foil into a continuous circuit 1½ in. wide. The foil is cut into strips using a paper hanger's straight-edge and roll cutter. The strips are cut 1½ in. short on alternate ends to form the continuous circuit of the coil. If 110 volts are applied to such a circuit it will draw 13 amp, heat to somewhere around 100° F, and emit 152 Btu per sq. ft. per hr. when mounted vertically. Lower output panels can be designed by using narrower strips.

Wallpaper can be used to cover the aluminum foil.

Experimental method uses thin aluminum foil strips which are laid in a sinuous pattern on wallboard and can be covered with wallpaper

KITCHEN LIGHTING TESTS

Effectiveness of lighting in model kitchen analyzed according to recommended IES values

E. W. Commery *

FEW aspects of home planning and modern home equipment equal the interest in the function of the modern kitchen, its layout possibilities, and the effectiveness of its equipment.

In the development of the modern kitchen many measurements have been made, and inconsistencies such as differences in counter and range top heights have been resolved. Step-saving studies have resulted in more efficient kitchen arrangements. Cupboard space over seven feet high seems to be disappearing.

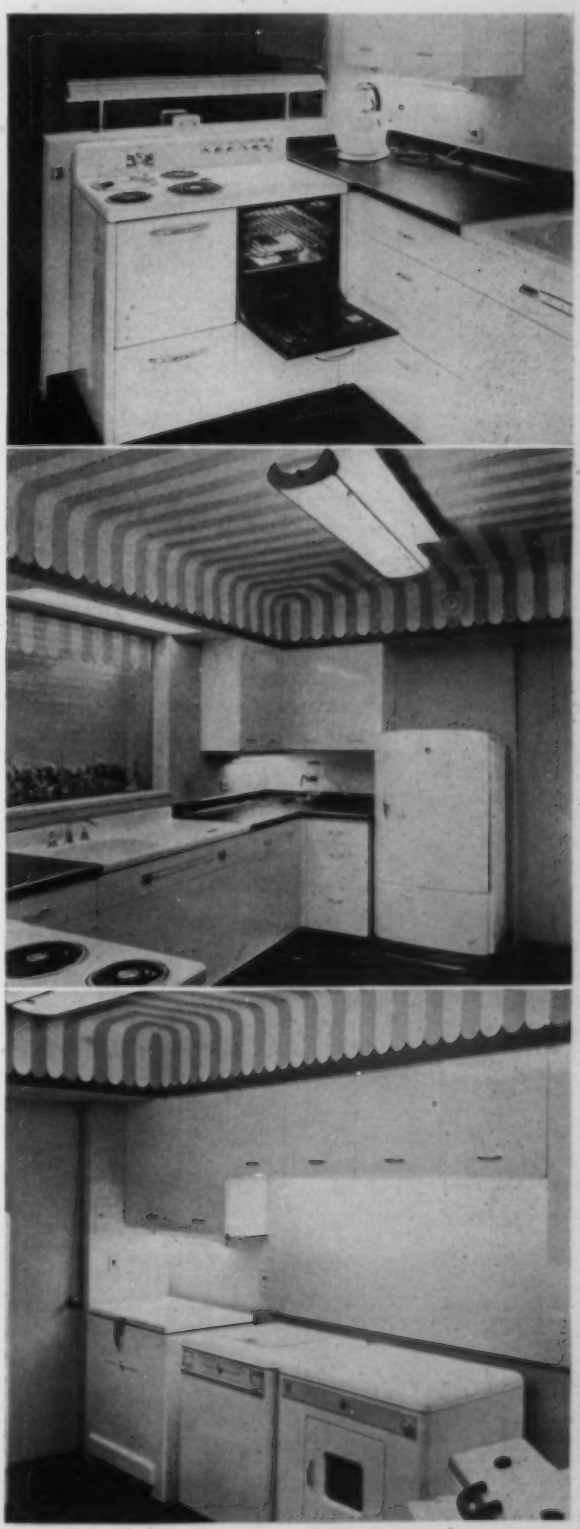
Kitchen lighting, too, can be measured. Such measurements are needed if the true purpose of the lighting, its functional effectiveness, is to be appraised. In the kitchen presented here for study, the attainment of 40 footcandles at work surfaces and 10 for general lighting was the design objective from the outset. Just how the design succeeds and how each lighting element makes its contribution may be observed from the graphs on pages 144, 149 and 151.

Light values designed for were chosen to conform with recommended practice which calls for 40 footcandles at work surfaces, including the range top and sink, and an average of 10 footcandles on a horizontal plane 30 inches above the floor throughout the room (*Recommended Practice of Home Lighting*, Illuminating Engineering Society).

It should be noted that even though the center fixture employs two fluorescent tubes which generate as much light as approximately three 100-watt incandescent-filament lamps do, it never satisfies the 40 footcandle work-light requirement. Since the center fixture is always back of the worker, the effect of body-shadow was measured and plotted. It does, however, supply the 10 footcandles average general lighting required; and it supplies from 50 to 100

* General Electric Co., Nela Park, Cleveland

(*Continued on page 144*)

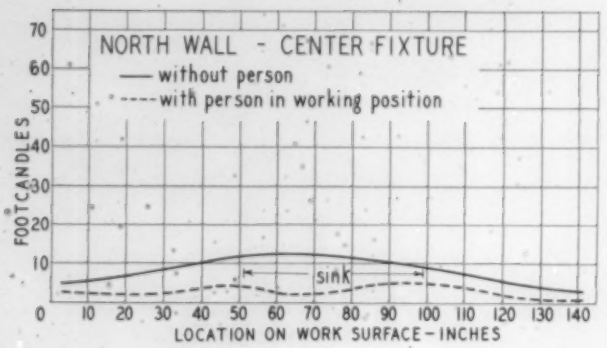


Top: stove, under-cabinet lighting near west wall; middle: center fixture, soffit light and under-cabinet light (north wall); bottom: center and end-cabinet lighting over laundry and freezer (south wall). Details on pp. 144, 149, 151

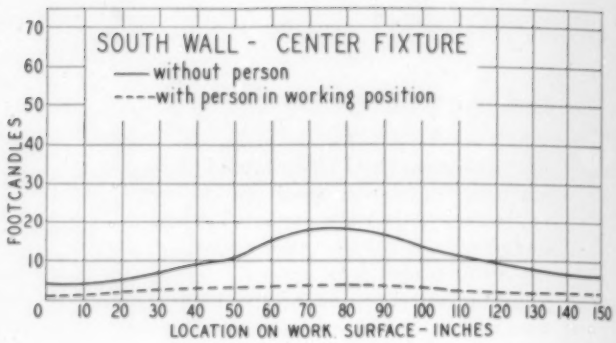
KITCHEN LIGHTING TESTS

(*Continued from page 143*)

Note: illumination values are taken along center line of work surfaces



1.



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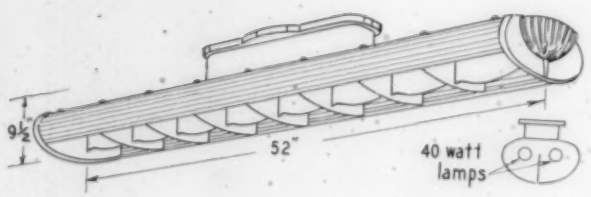

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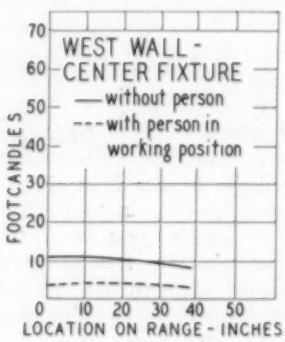
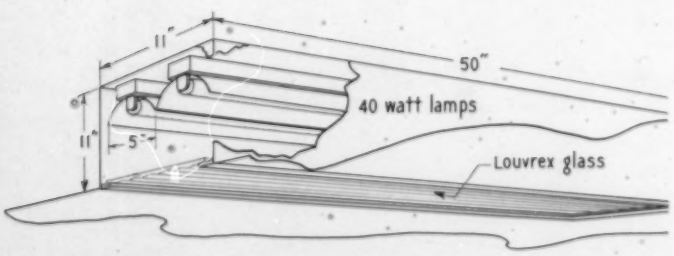


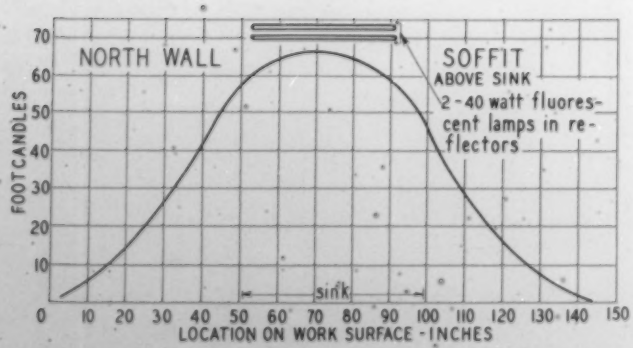
4.

The center fixture (3), indispensable for upper cabinets and lower drawers, needs support in supplying lighting (40 footcandles recommended) along work surfaces (graphs 1, 2, 4)



5.

Polished metal reflectors help soffit (5) provide correct illumination (6); over-sink, glazed enclosure is white



6.

footcandles on the upper cabinet faces for locating items — many with finely-printed labels — in these cabinets when opened.

The need for lighting equipment carefully placed over each area, such as the sink, range, ironer, and all important work counters, is demonstrated. In no instance may the light output of the units be lessened materially if the sought-for standards are to be attained. While the individual units, when used alone, have in the past been considered as sufficient, the reported tests shown here point to the use of the general and localized lighting together to attain lighting that is keyed to the advances in modern kitchen functioning.

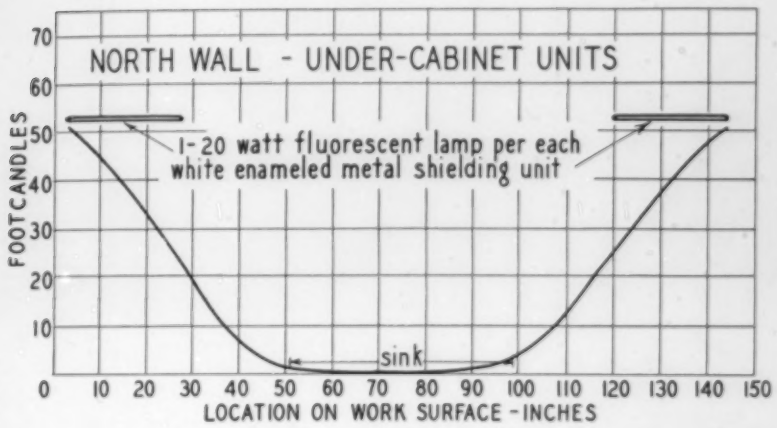
Work surfaces along all walls except east are included in the analysis; here most of the space is taken up by the refrigerator and door.

(*Continued on page 149*)

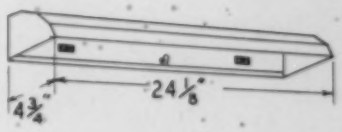
KITCHEN LIGHTING TESTS

(Continued from page 144)

7

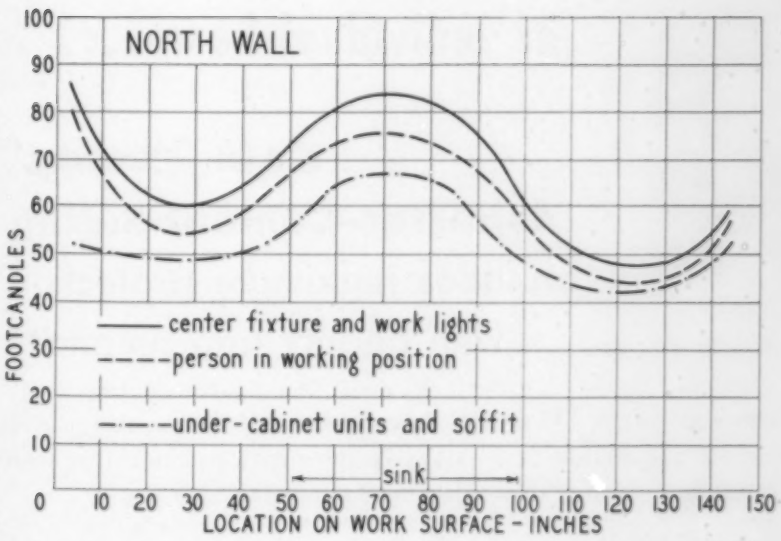

NORTH WALL - UNDER-CABINET UNITS
1-20 watt fluorescent lamp per each white enameled metal shielding unit
FOOTCANDLES
sink
LOCATION ON WORK SURFACE - INCHES

8



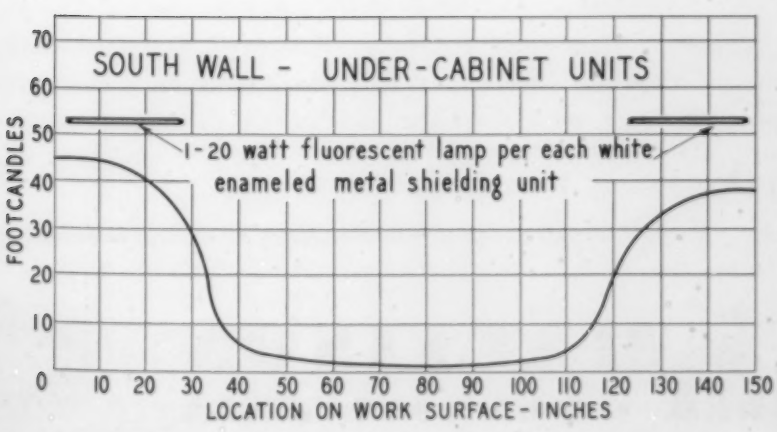
Individual under-cabinet work lights (8) fill in at the ends of the north wall. Lighting curve (7) is combined with (6) to complete the north wall analysis (9)

9



Over-sink soffit light and under-cabinet work lights combine to illuminate better than the basic 40 footcandles sought (9). All light values are increased by use of the center fixture with body shadows reducing its efficiency somewhat

10


SOUTH WALL - UNDER-CABINET UNITS
1-20 watt fluorescent lamp per each white enameled metal shielding unit
FOOTCANDLES
LOCATION ON WORK SURFACE - INCHES

By comparing curve (10) with the similar one from the north wall (7), the effect of white work surfaces along south wall in increasing light values is demonstrated

(Continued on page 151)

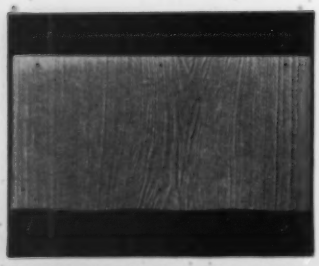
This Indiana housing development features "Century" Asbestos-Cement Siding on first stories, with K&M "Century" Apac board used as skirting at the foundations.

On this attractive home, "Century" Siding creates a pleasing effect, while blending with other materials.

For low-cost housing developments or individual homes...

K&M *"Century"* Asbestos-Cement Siding

provides maximum protection with beauty and simplicity



No. 57 "Century" Asbestos-Cement Siding supplied in shell white or graytone, straight or wavy buttline styles.

When you specify "Century" Asbestos-Cement Siding, you provide a trim, attractive appearance . . . while guaranteeing a practical, fire-weather-and-rot-resisting exterior that will actually toughen with age.

"Century" Siding has a deep-grained, weathered cypress finish that effectively duplicates wood . . . with thick butts that cast the deep shadow line your clients desire. It resists attacks by rodents and termites, never needs protective painting.

In computing your costs, remember "Century" Asbestos-Cement Siding comes in large unit sizes, 12″ x 24″, which make for speedy, economical application. Any good carpenter can install them easily and quickly. Investigate the full benefits of "Century" Siding. Your letter will receive our prompt attention.

Original manufacturers of Asbestos-Cement Shingles in this Country

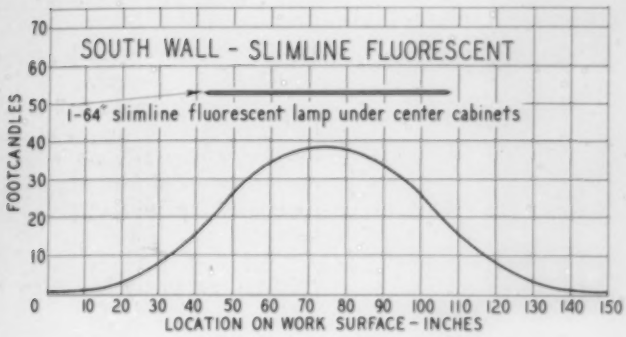
KEASBEY & MATTISON COMPANY • AMBLER • PENNSYLVANIA

DIAMOND ANNIVERSARY 1873 1948 KEASBEY & MATTISON CO.

KITCHEN LIGHTING TESTS

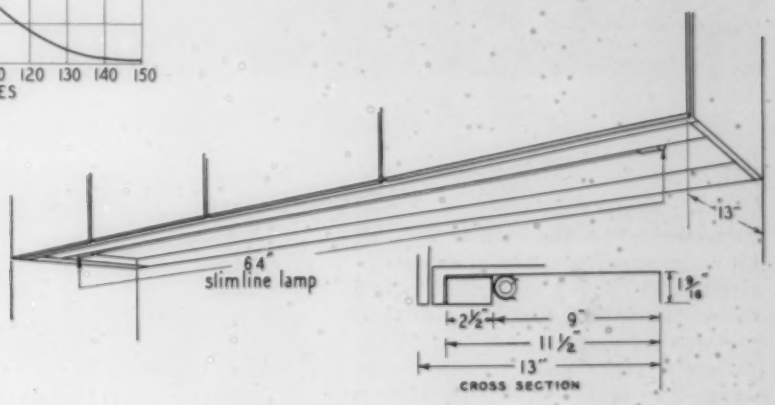
(Continued from page 149)

11

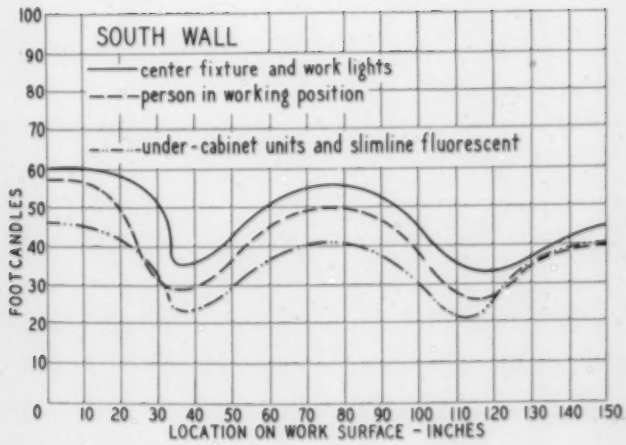

SOUTH WALL - SLIMLINE FLUORESCENT
1-64" slimline fluorescent lamp under center cabinets
FOOTCANDLES
0 10 20 30 40 50 60 70
10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
LOCATION ON WORK SURFACE - INCHES

Effectiveness of single slimline lamp (12) under center cabinets is shown in curve (11). Distance between lamp and work surface is 29½ in.

12



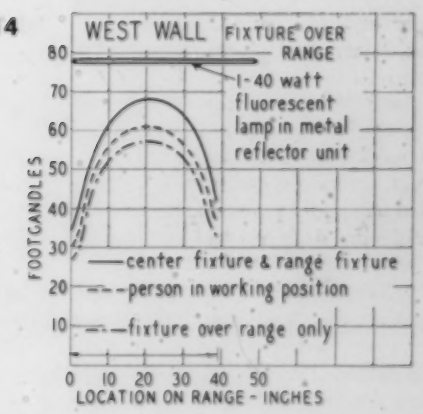
13


SOUTH WALL
center fixture and work lights
person in working position
under-cabinet units and slimline fluorescent
FOOTCANDLES
0 10 20 30 40 50 60 70 80 90 100
10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
LOCATION ON WORK SURFACE - INCHES

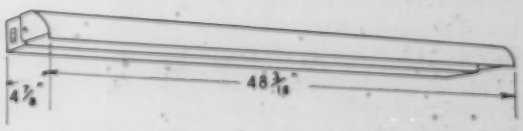
Illumination across the center of the range from left to right (14) averages close to the objective value with the fixture (15) placed 14 in. above the range. This height aids in providing light in deep cooking utensils. Reference to graph (4) illustrates inadequate lighting on range surface when center fixture is used alone

The combined effect of center and end work lights barely attains the 40 footcandles objective along south wall (13). The center fixture makes up for the deficiency that exists when slimline and undercabinet lights are used alone. The whole area would be more uniformly lighted if the end work lights were moved in toward the center about one foot

14

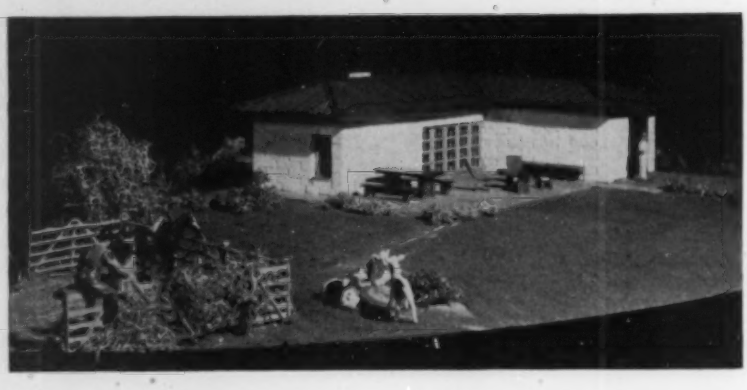

WEST WALL FIXTURE OVER RANGE
1-40 watt fluorescent lamp in metal reflector unit
FOOTCANDLES
0 10 20 30 40 50 60 70 80
center fixture & range fixture
person in working position
fixture over range only
0 10 20 30 40 50
LOCATION ON RANGE - INCHES

15



PRODUCTS for Better Building

Ben Schnall Photo



Model building kit has miniature bricks and mortar for variety of structures

BRICK MODEL BUILDING KIT

Brickplayer is the name for a cleverly contrived bricks and mortar building kit which should prove to be an instructive toy for "young architects" as well as a fascinating pastime for their grownup counterparts.

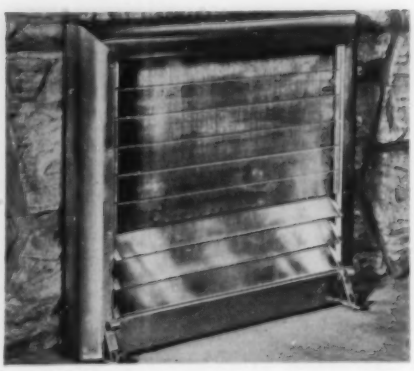
Recently developed in England and designed by Marie Frommer, Architect, of New York, these kits provide all the materials to build replicas in miniature of brick houses, railroad stations, bridges, churches, stores, castles and forts.

Model bricks are one-tenth the size of real brick (they would have been much too small to handle if they corresponded with the ¼ in. scale); however the buildings conform to ¼ in. scale which is the same as used for 0-gauge model railroads.

Bricks come in a variety of sizes and shapes together with accessories such as: door and window frames, celluloid glazing, beams and pillars, and shingle or tile roofs.

Each model is permanent because once the mortar is dry, the building is said to set solid and stand any amount of use; yet buildings can easily be dismantled by simply soaking in water, and the bricks are designed to be used over again without deterioration.

There are two kit sizes with the small one making five models and the larger edition, nine; packages of accessories are also available. The kits were originally designed for use in England, with the models following typically English architecture; but they have recently been adapted to the architecture of this country. The manufacturer is J. W. Spear & Sons Ltd., Enfield, Middx., England. Inquiries should be directed to Marie Frommer, Architect, 140 W. 57th St., New York, 19.



Fireplace draft adjusted by glass louvers

FIREPLACE CONTROL SCREEN

A newly invented *Fireplace Control Screen* is reported to increase fireplace efficiency to such an extent that the same amount of fuel burns three times as long, delivering three times as much heat. At the same time, the control screen is said to reduce the high room heat loss that ordinarily occurs with fireplace use.

These improved operating qualities are the result, according to the manufacturer, of having just the right amount of draft.

Heavy, plate glass louvers, spaced ⅛ in. apart, can be adjusted at the top or bottom to check or increase the draft by simply turning knurled knobs geared to the louvers.

Three standard sizes are manufactured in all-brass or black frame with brass fittings. Dollinger Corp., Rochester, N. Y.

LIGHTWEIGHT AGGREGATE

The lightweight building aggregate *perlite* is now being processed and distributed by the Perlite Mfg. Co. of Carnegie, located in Carnegie, Pa.

Raw perlite, a glass-like, volcanic rock, is imported from the Rocky Mountain region, pulverized and heat treated (or "popped") to produce an aggregate weighing from 3 to 12 lb. per cu. ft.

Concrete blocks using perlite aggregate weigh only about one-half that of standard block and have an insulating value of approximately 20 times the latter, according to the manufacturer. Concrete slabs made of perlite have the same insulating qualities plus being excellent fire retarders.

As a plaster base, perlite is claimed to lighten plaster weight as much as a ton for a normal sized room, and to double the speed with which plaster can be applied. Perlite Mfg. Co. of Carnegie, Carnegie, Pa.

PREFAB RADIANT HEATING COILS

Prefabricated copper radiant heating coils are being marketed with a special design said to provide even heat distribution and thus eliminate high and low heat zones. The special design is accomplished by bending the coils in what might be described as a "labyrinth" arrangement so that high and low temperature tubes are side by side (most clearly seen from the photo).

The manufacturer claims that installation requires only 25 per cent of the field labor expended for the customary sinuous-type coil.

Even-Ray coils are made from hard copper to minimize danger of damage when being installed.

The manufacturer provides an engineering service for arranging layouts or designs. The Even-Ray Co., 879 Broadway, Newark 4, N. J.

Prefabricated radiant heating coils designed to provide even heat distribution

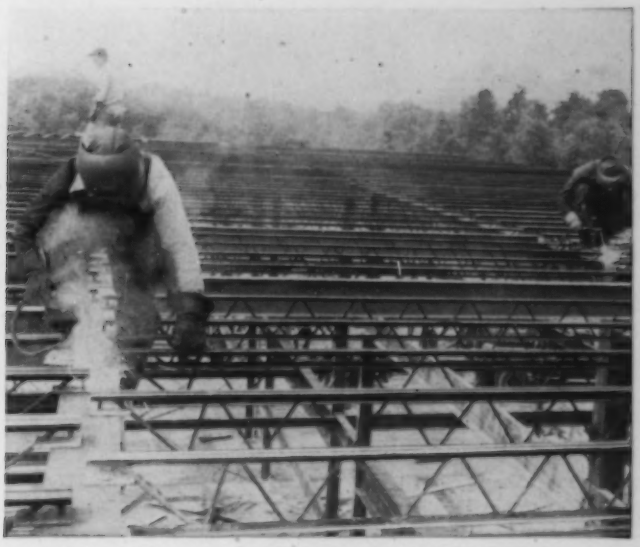
DISHWASHER

For average operation, the new *Colt Autosan CU-16* dishwashing and sanitizing machine is designed to handle 40 racks (900 dishes or 1500 average glasses)

(*Continued on page 178*)

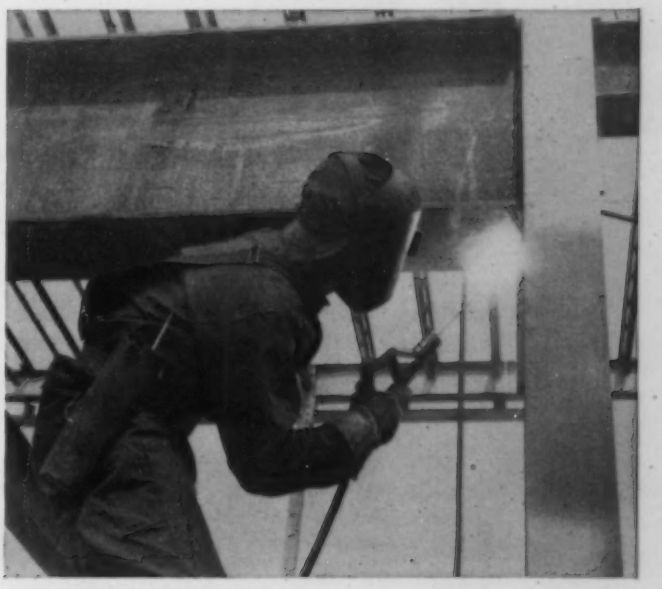
Simplifies Erection of School with Arc Welding

19-ROOM JR. HIGH for South Euclid-Lyndhurst, Ohio, schools. Eventually to comprise 25 rooms plus gym. Architects: C. B. Rowley & Assoc.; Structural Engineer: Frank Eroskey & Assoc.; General Contractors: Leo W. Schmidt Co.; Structural Work: Builders Structural Steel Co. (all of Cleveland).



BAR JOISTS of roof are welded to beams with 2″ fillet welds on each side. First and second floor are reinforced concrete. Final building to be 400 ft. long with 200 ft. wings. Present part is 210 ft. x 63 ft. plus heating plant.

BEAM-TO-COLUMN connections bolted, plumbed, then arc welded. Total steel in present building 160 tons with columns of 5″ to 8″; beams and girders up to 30″. Welded with $\frac{5}{32}$″ and $\frac{3}{16}$″ "Fleetweld 5" electrode and portable Lincoln Welders.



WELDED IN 8 DAYS. Two welders completed the welding of the framework in 5 days after members were erected, and welded the joists to the beams in 3 days. The builder reports that arc welding greatly simplified the erection procedure and resulted in an extremely rigid structure.

The above is published by LINCOLN ELECTRIC in the interests of progress. Architects and engineers are invited to write on their letterhead to be placed on mailing list for Structural Welding Studies. The Lincoln Electric Company, Dept. 173, Cleveland 1, Ohio. **Advertisement.**

ANTICIPATE STYLE CHANGES WITH *Oak Floors*

With oak floors home owners will have no concern over changing styles in decor.

Oak floors provide durable, beautiful, easy-to-maintain surfaces for large or scatter rugs of any kind. If wall-to-wall carpets are anticipated, they will stay firm and smooth over oak. And when they do wear out, or when owners tire of them, the beauty of the oak is still there.

Especially where the first cost of the home precludes the use of new or expensive furnishings, oak floors are complete in themselves, with their warmth of charm and hospitality and their enduring beauty.

ASK FOR ARCHITECTS' DATA BOOK—*which gives quick and usable information for specifying, laying, finishing and maintaining oak floors. Available from your local oak flooring dealers or from the National Oak Flooring Manufacturers' Association, 814 Sterick Building, Memphis, Tenn.*

OAK FLOORS

BEAUTY • DURABILITY
ADAPTABILITY • ECONOMY

NEWS FROM CANADA

(*Continued from page 10*)

Toronto ratepayers on January 1, 1947, it was estimated that its then 854 units would cost $5,900,000, or $6900 apiece. However, the first 56 units have been contracted for at a cost of $500,000, or $8900 apiece. This represents an increase of 30 per cent. Resort to escalator clauses in the contracts can send the cost even higher.

N.H.A. Loans Accelerate

Central Mortgage and Housing Corporation reports that lending operations under the National Housing Act reached an all-time high during May. Loans amounting to $11.7 million were approved for the construction of 2229 dwelling units. These figures bring the totals for the first five months of the year to $33.6 million for 6632 units, nearly double the totals for the same period of 1947 when $17.5 million financed construction of 3685 units.

Tax Ruling Reversed

Salaried architects have acquired a new look — a sad one. The Department of National Revenue formerly allowed them to deduct the membership fees they pay provincial architectural associations in calculating their income tax. This ruling has now been reversed.

Notwithstanding strong representations from the Royal Architectural Institute of Canada, Hon. D. C. Abbott, Minister of Finance, explains that the change is "in accordance with the long accepted taxation principle which states that salaries and wages shall be considered to be net income and shall not be reduced by the allowance of any expenses."

Capital Planning Aided

To bring to life Prime Minister W. L. Mackenzie King's dream of making Ottawa "worthy of . . . the Canada that is to be," the Dominion Government has appropriated $2.5 million for establishment of a "national capital fund." This money, and that which is expected to be voted in future, is to be used for financing development projects recommended by the National Capital Planning Committee. The Committee consists of a group of Canadian experts with Jacques Greber, well-known French town planner, acting as consultant.

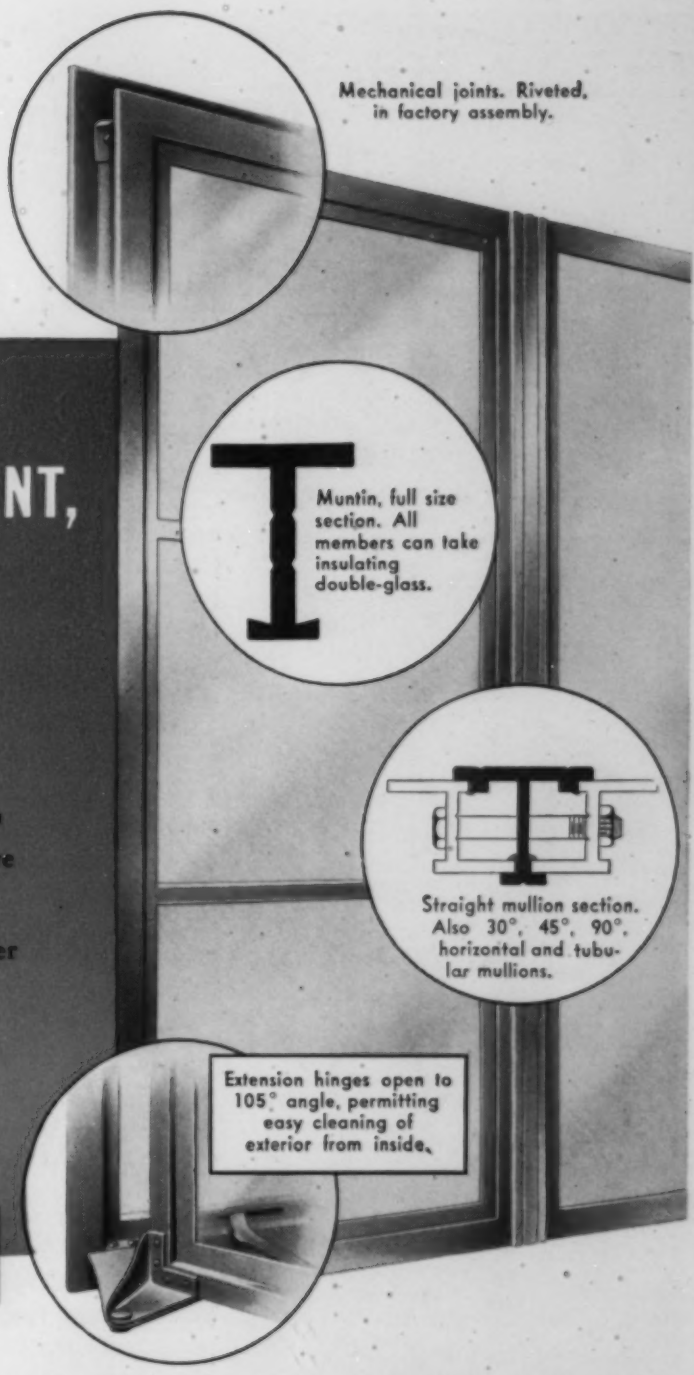
Housing Progress Compared

During the first five months of 1948 Canada saw construction commence on 26,359 dwelling units, according to the latest housing bulletin issued by the

(*Continued on page 156*)

Superior in detail, low in price, wide in range of types and sizes...

REYNOLDS ALUMINUM RESIDENTIAL CASEMENT, FIXED AND PICTURE WINDOWS



Mechanical joints. Riveted, in factory assembly.

Muntin, full size section. All members can take insulating double-glass.

Straight mullion section. Also 30°, 45°, 90°, horizontal and tubular mullions.

Extension hinges open to 105° angle, permitting easy cleaning of exterior from inside.

How to Write Air Infiltration Specification:

Windows of the type furnished shall have been tested by a recognized laboratory and shall have shown air infiltration not exceeding ½ cubic foot of air per minute per foot of vent perimeter when subjected to static pressure equivalent to a wind velocity of 25 mph.

REYNOLDS ALUMINUM CASEMENT WINDOWS MEET THIS SPECIFICATION.

IF YOU SEE RUST YOU KNOW IT'S NOT ALUMINUM

REYNOLDS *Lifetime* ALUMINUM BUILDING PRODUCTS

Half-round

Colonial box

O.G. style

REYNOLDS *Lifetime* ALUMINUM Gutters and Downspouts

Rustproof permanence at about half the price of other rusproof materials. Three styles available in either plain or stippled-embossed aluminum.

A.I.A. File Brochures on request from
REYNOLDS METALS COMPANY, Building Products Division, Louisville 1, Ky.

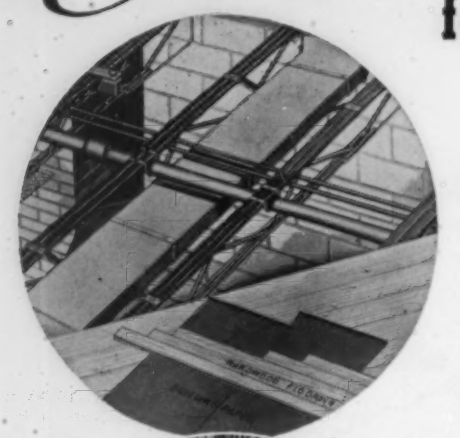
WORLD'S LARGEST PRODUCER OF ALUMINUM BUILDING PRODUCTS:

Shingles, Clapboard Siding, Corrugated and 5-V Crimp, Snap-Seal and Standing Seam Roofing, Weatherboard Siding, Built-Up Roofing, Nails, Gutters, Wall Tile, Windows, Reflective Insulation, the "Alumi-Drome" (prefabricated utility building).

for better design

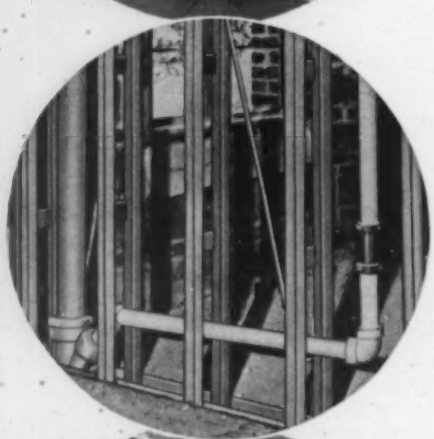
Specify Macomber Units

for steel framing



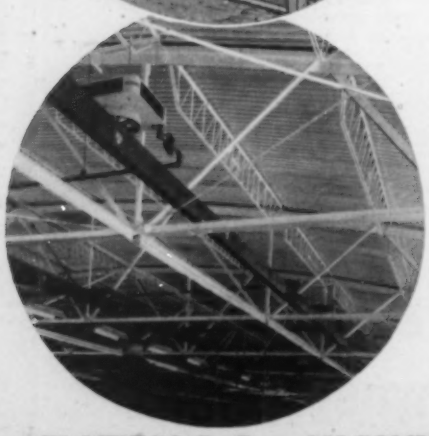
FLOORS

Macomber V Bar Joists not only have the nailing feature WITHOUT wood strips but the open construction of the original bar joist. With the stronger, nailable top chord, panel points are farther apart providing greater room for pipe and duct installations.



WALLS

Macomber Load Bearing Partition Panels give you the structural advantages of steel, the nailing qualities of wood plus the OPEN advantages of V Studs. Here again is outstanding engineering without penalizing the man who installs pipe and conduit.



ROOFS

Macomber Roof Systems give the designer a wider selection of standard catalogued items for the job at hand. Regardless of existing conditions or new work, check Macomber Roof members. Available from one source are Trusses of all types; Purlins, Longspans and Decking. Write.

IN MEXICO D. F. — MACOMBER DE MEXICO — CEDRO 500

V-BAR JOISTS AND PURLINS • V-STUDS • TRUSSES • LONGSPANS • DECKING

MACOMBER

INCORPORATED

CANTON, OHIO

STANDARDIZED STEEL BUILDING PRODUCTS

NEWS FROM CANADA

(*Continued from page 154*)

Dominion Bureau of Statistics. Starts are about 15 per cent higher than for the same period last year. In the U. S., Bureau of Labor Statistics show the number of starts for the first five months of 1948 to be 356,000 units, an increase of 28 per cent over the same period last year. Comparative starts per 10,000 population are: Canada 21, U. S. 25.

Before and after views of Toronto Coliseum restyled with aluminum facing material

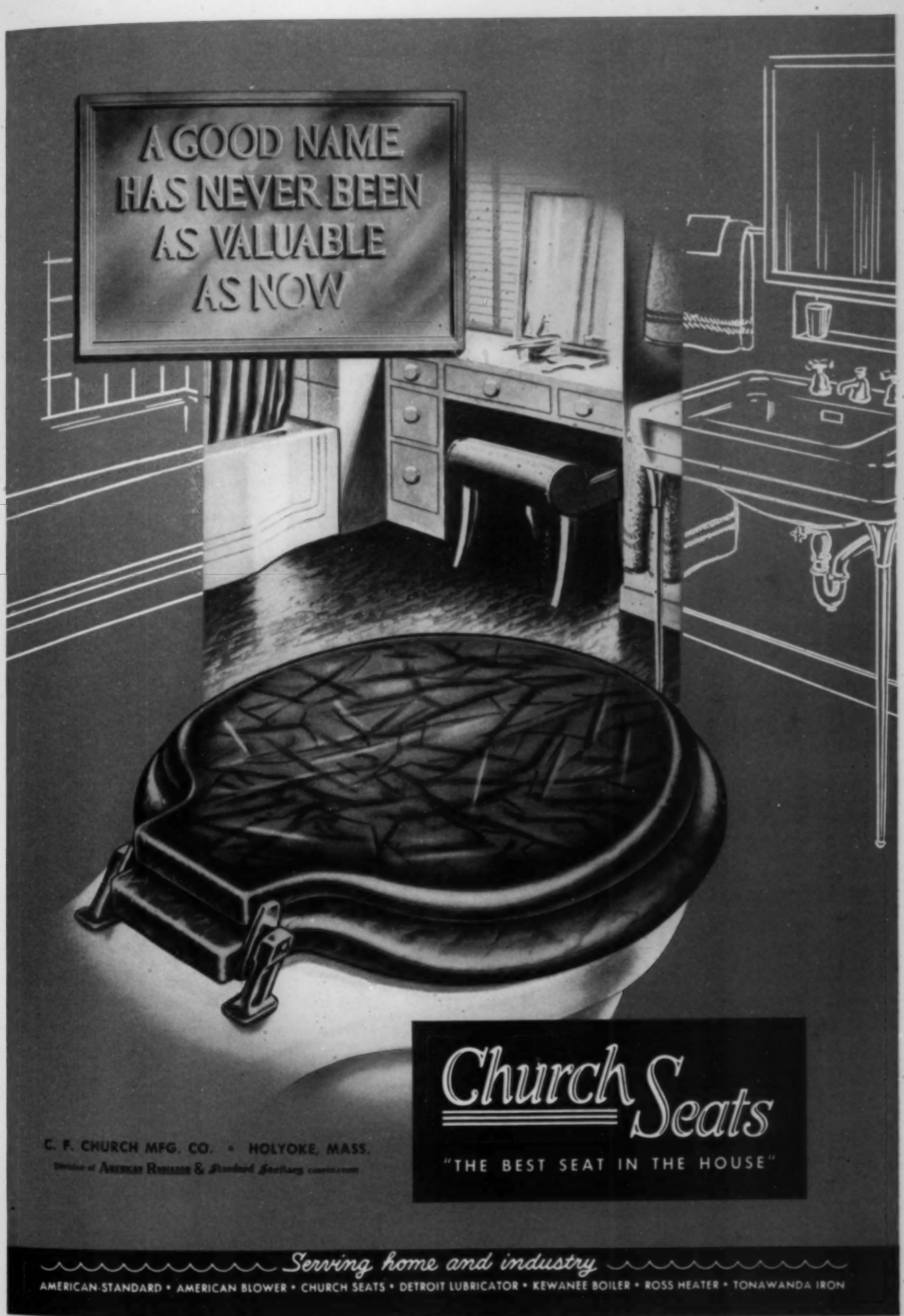
Aluminum Face Lifting

Aluminum magically transformed the appearance of the Coliseum, a somewhat undistinguished Toronto exhibition building, for the recent Canadian International Trade Fair. Standard extrusions and rolled sheets were used, and the dramatic simplicity of the design was enhanced by nightly floodlighting.

Contract Awards Level Off

If the Canadian construction industry had a face, there'd be a puzzled expression on it. The upward spurt in building contract awards traditionally expected in June failed to materialize. According to the authoritative MacLean Building Reports, engineering is the only category to show an increase over May. It's up 21 per cent, whereas housing is down

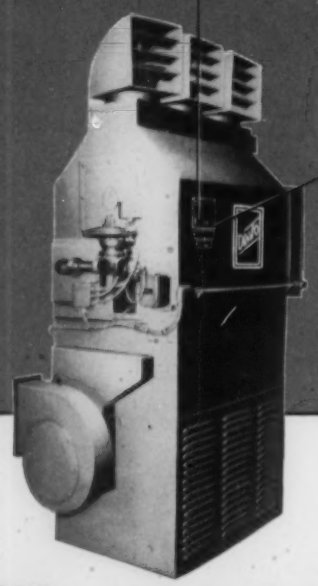
(*Continued on page 158*)


A GOOD NAME
HAS NEVER BEEN
AS VALUABLE
AS NOW
Church Seats
"THE BEST SEAT IN THE HOUSE"
C. F. CHURCH MFG. CO. • HOLYOKE, MASS.
Division of American Radiator & Standard Sanitary Corporation
Serving home and industry
AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILER • ROSS HEATER • TONAWANDA IRON

LISTED— APPROVED

LISTED UNDER REEXAMINATION SERVICE UL UNDERWRITERS' LABORATORIES, INC. OF

COMPLIES WITH NATIONAL SAFETY REQUIREMENTS AMERICAN GAS ASSOCIATION APPROVED



NOW—two famous laboratories have tested the Dravo *Counterflo* Heater and found it to be constructed in accordance with their standards. Effective immediately all standard gas-fired Dravo *Counterflo* Heaters will bear the American Gas Association and Underwriters' Laboratories, Inc., marker indicating approval and listing, respectively. In addition all standard oil fired Dravo *Counterflo* Heaters are listed by Underwriters' Laboratories, Inc.

For additional information regarding sizes, efficiencies, specifications, etc., write Dravo Corporation, Heating Section, Dravo Building, Pittsburgh 22, Pa. Ask for bulletin HI-516.

DRAVO

Dravo also manufactures the DRAVO CRANE CAB COOLER *for air conditioning hot-metal crane cabs*

DRAVO CORPORATION

PITTSBURGH • CLEVELAND • PHILADELPHIA • DETROIT • NEW YORK • CHICAGO • ATLANTA • BOSTON

Sales Representatives in Principal Cities

NEWS FROM CANADA

(*Continued from page 156*)

21 per cent, commercial and institutional are down 7 per cent, and industrial is down 31 per cent. However, the over-all picture is still bright. Total awards for the first six months of 1948 reached $483 million, topping $329 million for the same period last year by 47 per cent.

Lighter Brick Likely

Development of a lighter-weight and faster-color building brick is likely to be one result of current research jointly undertaken by the Brick and Tile Manufacturer's Association and Canadian universities. W. C. McGolpin, President of the Association, announces that "Final results will be issued late this year. It is already apparent that this research has opened the door to better and cheaper clay products for tomorrow's builders." The project is similar to one sponsored in U. S. by the Structural Clay Products Institute.

Material Output Gains

Construction history was made during the first three months of 1948, according to *Housing in Canada*, a quarterly review published by Central Mortgage and Housing Corporation. For the first time since the end of the war, the supply of some building materials exceeded demand for them.

Of 28 materials surveyed, 11 showed production boosts of more than 20 per cent over the first quarter of 1947. Electrical items topped the list, followed by vitrified sewer pipe, bathtubs, hot water storage tanks, cast iron soil pipe, steel pipe, cement, builders' hardware and gypsum wallboard, in the order named. Twelve other materials registered gains of 20 per cent or less.

Only four items were produced in smaller quantities than during the first quarter of 1947. Manufacture of rock wool batts and asphalt rolls dropped 28 and 22 per cent, respectively, due to dealers having reasonably plentiful supplies of these materials. The output of warm air furnaces decreased five per cent, and that of asphalt shingles one per cent.

Canadian Architects Score

Marani and Morris, a Toronto firm, has been awarded honorable mention for architectural design in the art competition held in conjunction with the XIV Olympiad. Entries were limited to buildings intended for use in connection with sport. The Toronto architects submitted a model of the grandstand they designed for the Canadian National Exhibition (see ARCHITECTURAL RECORD, June, 1948, p. 10).

ALCOA ECONOMY CASTINGS

For Exterior
WALL PANELS

LOW COST . . . FAST CONSTRUCTION
LESS MAINTENANCE

Now you can improve appearance and *reduce construction costs*, using high-quality Alcoa Cast Spandrels and Wall Panels. By coordinating design specifications and production facilities, Alcoa now can offer economy castings at attractive prices as compared with competing materials.

Add to the economies of improved appearance at lower cost, the advantages of aluminum's light weight, corrosion resistance and easier handling and you'll see how Alcoa Economy Castings can help you solve the problems of production time and costs.

CALL TODAY
get price and design data

Alcoa Economy Castings can be produced promptly to your designs. For complete information on prices and design specifications permitted, ask for the booklet, Alcoa Economy Castings. Call your nearby Alcoa Sales Office or write ALUMINUM COMPANY OF AMERICA, 1867 Gulf Building, Pittsburgh 19, Pennsylvania.

ALCOA FIRST IN **ALUMINUM**

ALCOA ALUMINUM 1888 1948 60 YEARS OF SERVICE

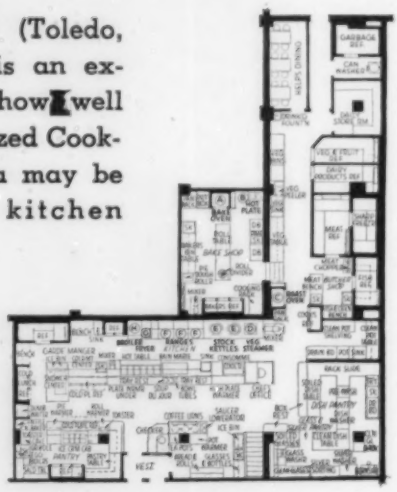
THE RECORD REPORTS (*Continued from page 18*)

Banquet, first Congress de l'Union Internationale des Architectes, Lausanne

KITCHEN PLAN NO. 46:

Forty-sixth of a series of successful mass-feeding operations.

This Hillcrest Hotel (Toledo, Ohio) kitchen plan is an excellent example of how well the efficient "Specialized Cooking Tool" layout idea may be applied to hotel kitchen modernizations.



KEEP FOR HANDY REFERENCE!

COOKING EQUIPMENT USED:

(a) 1 No. 982 Blodgett Gas-fired Baking Oven
(b) 1 Gas-fired hot plate
(c) 1 No. 952 Blodgett Gas-fired Roast Oven
(d) 1 Vegetable Steamer
(e) 2 Stock Kettles
(f) 3 Solid top gas-fired ranges (with salamander)
(g) 1 Gas-fired deep fat fryer
(h) 1 Gas-fired broiler

Designed by: Sam V. Wells, Food Service Equipment Engineer. Installed by: Alex Janows & Co. (both of Chicago, Illinois)

Roasting and other long-time cooking operations are here removed from beneath range tops, to Blodgett's No. 952 Roasting Oven — which has the capacity of 4.5 range ovens — to make for easier handling, less equipment. Baking, of course, in Blodgett's versatile No. 982, an 8-pan, dual control baking oven. For details and specifications, write to

ONE HUNDRED YEARS OF

THE G. S. BLODGETT CO., INC.

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New York Museum of Science and Industry, R.C.A. Bldg., Rockefeller Center, New York City.

Oct. 2–10: Construction Industries Exposition, Sam Houston Coliseum, Houston, Texas.

Oct. 5: 1st Public Forum on Interior Design and Decoration and Related Subjects, presented by the American Institute of Decorators; Town Hall, New York City.

Oct. 5–7: 1st Regional Materials Handling Exposition, Mechanics Hall, Boston, Mass.

Oct. 13–15: Fall Meeting, American Society of Civil Engineers, Statler Hotel, Boston, Mass.

Oct. 13–16: 15th Annual Meeting, National Assn. of Housing Officials, and 3rd Annual Exhibit of Building and Maintenance Products, Olympic Hotel, Seattle, Wash.

Oct. 25–29: National Metal Exposition, sponsored by American Society for Metals, Philadelphia, Pa.

Nov. 15–17: Fall Meeting, American Oil Chemists' Society, Pennsylvania Hotel, New York City.

Nov. 29–Dec. 4: 18th National Exposition of Power and Mechanical Engineering, Grand Central Palace, New York City.

BUILDING NOTES

General Accounting Office

A new building, designed to meet the needs of "the world's largest auditing and recording house" is to be built in Washington, D. C., for the General

(*Continued on page 162*)

ANTONIO DI NARDO

With the death of Antonio di Nardo, well-known Cleveland architect, on June 28 at the age of 59, Cleveland and the architectural profession lost one of its most gifted and engaging personalities.

Trained in architecture at the University of Pennsylvania and the Beaux Arts Institute of Design of Philadelphia, Mr. di Nardo was affiliated with the offices of Durhing, Okie & Ziegler, Cove & Stewardson and Paul P. Cret in Philadelphia, and Arnold W. Breinner in New York before moving to Cleveland in 1921. He also taught design at Carnegie Institute of Technology in Pittsburgh and later at the School of Architecture of Western Reserve University in Cleveland. He was holder of the John Stewardson Memorial Traveling Scholarship in 1910.

Designer of many churches and large residences in the Cleveland area, he was also the architect of the Transportation Building for the Great Lakes Exposition in 1937 and the MacGregor Home for the Aged. He received many awards for the excellence of his work.

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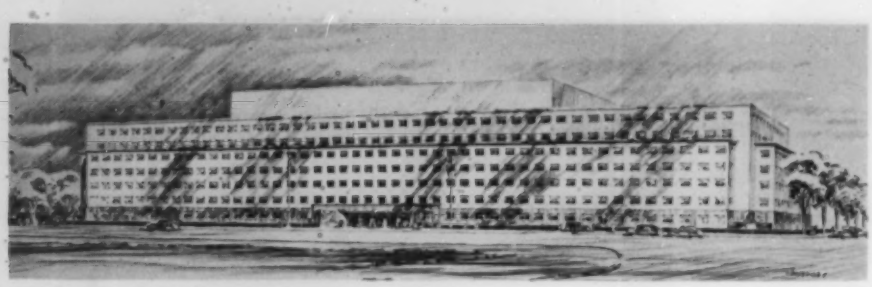

Public Buildings Administration design for Accounting Office of the Federal Government

Accounting Office of the federal government by the Public Buildings Administration of the Federal Works Agency. The 7-story limestone structure will be the block type without courts or wings. This type of plan was decided upon since it was believed it would afford the maximum amount of usable floor area within the limits of the site while conforming to the restrictions on building heights in Washington, and also, would provide the large open areas necessary to accomodate filing equipment and large scale business machine operations. The office and filing space will total 995,600 sq. ft.

The frame of the building will be of reinforced concrete with columns, spaced 25 ft. on center, supporting floors of flat slab construction. The exterior facing will be shot-sawn buff limestone with a polished granite base. Most of the interior partitions, except those of permanent corridors, will be movable to allow maximum flexibility. To facilitate the physical handling of the large volume of documents moving in and out of the building, a truck entrance and loading platform are provided at street level on Fourth Street.

To enable rapid and efficient circulation of personnel, the building will have two flights of moving stairways, up and down, capable of handling 8000 persons an hour. These are in addition to two main banks of elevators of six cars each.

There will be a centrally located cafeteria on the third floor, comprising 50,400 sq. ft., and a garage and workshop area in the basement and subbasement aggregating 284,000 sq. ft. for the parking of 800 automobiles.

It is expected that the drawings and specification will be ready this winter when bids will be received for construction of the new building.

New Durisol Plant

Reportedly the first industrial plant in the United States to be built of *Durisol* is now under construction at Beacon, N. Y. The plant will be a manufacturing center for Durisol, the new building material produced from wood chips chemically treated and mixed with cement (see ARCHITECTURAL RECORD, June, 1948, p. 145).

The plant, designed by Alexander D. Crosett, will occupy 40,000 sq. ft., and will be one story high, with the exception of the center section, which will be two stories high. This building is the first part of larger group that will eventually be developed.

Research Laboratories

Construction of new research and development laboratories at Skokie, Ill., for the Portland Cement Association

(*Continued on page 164*)

ANOTHER GREAT C&L PRODUCT

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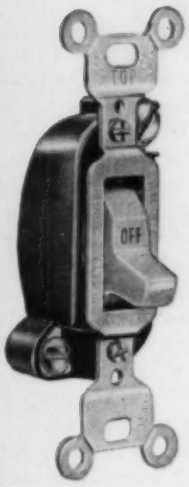
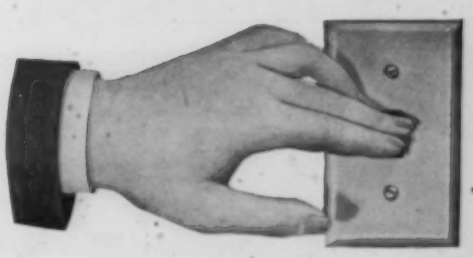
How the Mercury Switch helps you plan a better wiring job



It's a 10-ampere, 125-volt, T-rated switch. This rating answers the demand made by today's heavy loads. The mercury switch is equal in interrupting capacity to the best specification-grade switches. And, it carries the Underwriters' Laboratories approval — another indication of proved reliability and sound construction.



It has a silent, smooth action. Silent operation is an easily demonstrated plus value that makes it a natural for all modern wiring specifications. Because conventional blades have been eliminated, there is no contact click. A hermetically sealed "mercury-button" actuates the make-and-break at the flick of a finger.

It will last for a long, long time. Because there are fewer moving parts to wear out, the mercury switch cuts switch maintenance. A newly designed, modern handle identifies the switch, and makes it possible to point to a specific feature of the wiring system that is modern—up-to-date.

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For more information on the General Electric Wiring Materials line, write for a copy of *Wiring Materials Digest*. Just address Section D24-95, Construction Materials Department, General Electric Company, Bridgeport 2, Connecticut.

GENERAL ELECTRIC

will begin immediately, it was announced recently. Completion is scheduled for one year hence. Carr and Wright, Chicago, are the architects and engineers.

Plans call for two buildings, one of which will be partly two stories and partly three stories and basement. The other building, an auxiliary structure, with a small wing, will be one story high.

The laboratory group will be a highly specialized unit and will contain controlled atmosphere rooms capable of duplicating almost any climatic condition.

Competitions

Two competitions for architects licensed to practice in the State of New York have been announced recently by the Institute of Housing and Planning Studies of the New York State Division of Housing. Both competitions have been approved by the American Institute of Architects' Committee on Competitions. It is open to all registered architects in the State of New York except employees of the Division of Housing. William Lescaze, A.I.A., is the professional Adviser for both competitions. Both competitions will be judged in New York City by a jury of architects appointed by the New York State Division of Housing in collaboration with the Competitions Committee of the American Institute of Architects and the New York State Association of Architects. The closing date for both competitions is November 15, 1948.

Competition 1-A calls for "A Home For An Average Wage Earner In New York State," with the site to be located in a typical New York State suburban community. According to the announcement, the house is required to contain a living area, a work area, two bedrooms.

A first prize of $1,000 and a second prize of $500 will be awarded. There will also be ten Honorable Mentions with no money awards.

Competition 2-A calls for "A Multi-Family Housing Development For An Average Wage Earner In New York State." The prizes to be awarded are the same as in Competition 1-A.

In both instances the competitors are urged to submit designs that are original in approach, the point being stressed that the communities in question would have no prejudices as to the character of the architecture so long as it is good housing.

English Housing, Slow Tempo

"Much needed houses are being built for the eight million people in the London area by the London County Council at a rate which is making some impression on the shortage," writes Herbert U. Nelson, Executive Vice-President, National Association of Real Estate Boards, who is touring Europe to study housing. "Private building is practically at a standstill in order to clear the way for many big public housing projects. The 'target' for this year is 60,000 new units.

"All of the housing is for rent and is multi-family. Design is greatly improved over public housing formerly built in England, and the small apartments are comfortable and even spacious according to English standards.

"Costs of building in the London area are fully as high as in metropolitan districts in the United States, and for comparable quality of housing, probably higher. This is a source of mild surprise to the experienced observer because labor costs are less than half. Skilled carpenters and bricklayers get from $30 to $40 a week. Wages are frozen, but on its own work the government feels free to add a 20 per cent bonus. Except for lumber, materials cost no more than with us and in some cases less.

(*Continued on page 166*)

WHAT HAPPENS
INSIDE THE WALL?
In-wall condensation does its dangerous work behind walls, where you can't see the damage until it's too late. Cracked walls, peeling paint and ruined wallpaper, soggy inefficient insulation . . . the penalty is high and repairs are costly.
Bird Neponset Black Vapor Barrier is the permanent answer to in-wall condensation. Placed on the warm side of insulation, it not only ends vapor worries, but it also seals cracks, eliminates sidewall drafts and loss of heat. For about $20 for a $10,000 house, positive vapor protection is yours . . . specify Bird Neponset Black Vapor Barrier. Consult Sweets Architectural File 2e-1. For sample write Bird & Son, inc., 17 Pine St., East Walpole, Massachusetts.
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$2,000 DOOR PRIZE

Name the New Roddiscraft Door

1st Prize $1,000 — 2nd and 3rd Prizes $500 each

All you have to do is name the new Roddiscraft Door with the accordion type veneer core and follow the directions listed below.

About the Door Here are some facts about the door to guide you in selecting a winning name.

The new Roddiscraft door has a core made up of selected strips of veneer. These strips are spot-glued at intervals and stretched within the rails to form an accordion core design. This is a radical departure from the conventional core. The accordion core creates the strength and rigidity of a solid core with 50% less wood content.

Veneer strips are spaced 2" apart at points of greatest core-strip bending. This provides maximum support to the face panels and protects against puncture from abuse.

Face panels and rails are hardwood throughout. The whole assembly is pressure bonded with the finest glues obtainable and seasoned in specially constructed kilns for permanent straightness.

THERE YOU HAVE ALL THE FACTS YOU NEED TO THINK UP A PRIZE-WINNING NAME. PUT ON YOUR THINKING CAPS AND FOLLOW THESE SIMPLE DIRECTIONS:

1. Select the name you believe most appropriate and fitting. Then, in 25 additional words or less, complete the following statement: "I believe the new Roddiscraft Door with the accordion type veneer core is a superior door because ....." Each name submitted must be accompanied by a statement.

2. Send all entries to the Roddis Lumber and Veneer Company, Marshfield, Wisconsin. All entries must be mailed before midnight, November 20, 1948. Send as many entries as you please.

3. Entries will be judged on the basis of originality and aptness of thought by a panel of expert judges. All entries become the property of the Roddis Lumber and Veneer Company. The judges' decision will be final. In the event of a tie, duplicate prizes will be awarded.

4. The first prize winner will receive $1000; the next two winners will receive $500 each. All winners will be notified by registered mail.

5. This contest is open only to dealers and their employees and the employees of architectural firms, and millwork houses.

Roddiscraft *Roddis Lumber and Veneer Co.*
MARSHFIELD, WISCONSIN

THE RECORD REPORTS (*Continued from page 164*)

"The British should be able to build for 20 to 30 per cent less per cubic foot than we do, considering labor and material costs. No doubt one reason why they cannot lies in the big overhead of government operation and its endless paper work, permits, priorities, and delays. Then there is the matter of 'tempo.' Construction proceeds at a leisurely pace which reflects the British worker's long training in taking as long as possible to get a thing done."

ERRATUM

Inadvertently the names of the "two proper Bostonian Fellows" were omitted from the caption under the photograph on page 89 of the August issue. Our apologies to Mr. Charles D. Maginnis and Mr. Joseph D. Leland, and especially to Mr. Leland, as Mr. Maginnis appears in other photographs of the Convention. The only possible excuse is that two such well-known men need no identification for architectural readers.

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ADDS 7 NEW, STRIKING COLORS

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True permanent white, lightly marbleized with blue.

WHITE AND BLACK

Tracings of black on a true white field.

WHITE AND GREEN

Permanent white, veined with a delicate sea-green.

TUSCANY RED

A deep red mottled with white, black and gray.

AMERICAN BEAUTY

A clear, cool red illuminated with white.

RESEDA GREEN

Soft gray-green, marbled with faint markings of white.

COLONIAL BLUE

Rich grayed blue, variated with tones of lighter blue.

These seven new marbleized colors are an addition to the Amtico line of Rubber Flooring, which now includes eighteen beautiful colors. Architects and interior decorators can now plan striking contrasts or harmonious blendings with the decor of beautifully appointed rooms.

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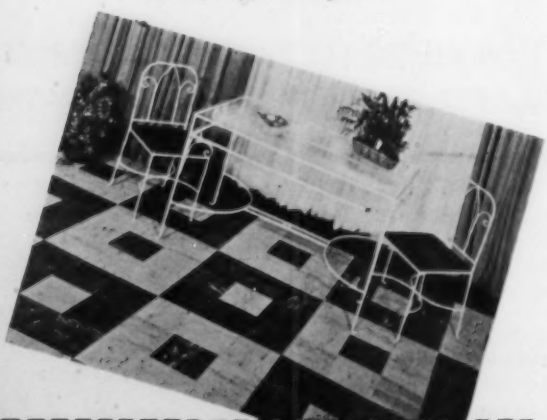

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OFFICE NOTES

Offices Opened, Reopened

Orin M. Bullock, Jr., Architect, has reopened his office for the practice of architecture at Room 12, Old Kirn Bldg., Portsmouth, Va.

James G. Gauntt, Architect, has re-established his office at 410–411 Dome Bldg., Chattanooga, Tenn. Mr. Gauntt will specialize mainly in industrial and commercial buildings.

David A. Hall, Architect, has opened an office for the general practice of architecture at 720 Jones Bldg., 1331 Third Ave., Seattle 1, Wash.

Benjamin Franklin Lippold, Architect, has opened an office in the Mason Bldg., Fresno, Calif.

Mark E. Starr, Engineer, has opened an office at Selinsgrove, Pa.

New Addresses

The following new addresses have been announced:

California Designing & Drafting Assn., 1511 Irving St., San Francisco 22, Calif.

H. K. Ferguson Co., Cleveland Office, Ferguson Bldg., East 11th St. at Walnut, Cleveland 14, Ohio.

Donald M. Schoepke, Architect, Stephenson Bldg., 1916½ Hall Ave., Marinette, Wis.

John T. Simpson, A.I.A., Architect and Engineer, 44 Pinckney Rd., Apartment 12D, Red Bank, N. J.

Sound Construction & Engineering Co., General Office, 1300 Aloha St., Seattle 9, Wash.

Henry B. Steeg & Associates, Engineers, 2331 N. Meridian St., Indianapolis 8, Ind.

New Firms, Firm Changes

John C. Colombo, Gustave G. Abrams and Ernest J. Petersen, all A.I.A., have announced their association for the practice of architecture, with offices at 100 Stevens Ave., Mt. Vernon, N. Y.

The H. K. Ferguson Co., Industrial Engineers and Builders, have announced the formation of a new Atomic Energy Division to specialize exclusively in nuclear engineering problems.

Charles Macklin, of 206 S. Fourth St., Springfield, Ill., has announced that he is now qualified to practice as an architect as well as a structural engineer.

Bryan W. Nolen and Robb W. Moore have announced the formation of the firm of Nolen & Moore, Architects, with offices at 301 Oklahoma Natural Bldg., Oklahoma City, Okla.

Announcement has been made of the opening of the office of Hank Avery, Architect, Inc., Andrew D. Sakos and Louis B. Gohmert, Associates, 801 McBurnett Bldg., San Angelo, Texas.

Florence Ward Stiles, A.I.A., has joined the office of Ambrose S. Higgins & Associates, Architects-Engineers, 200 Main St., Bar Harbor, Maine.

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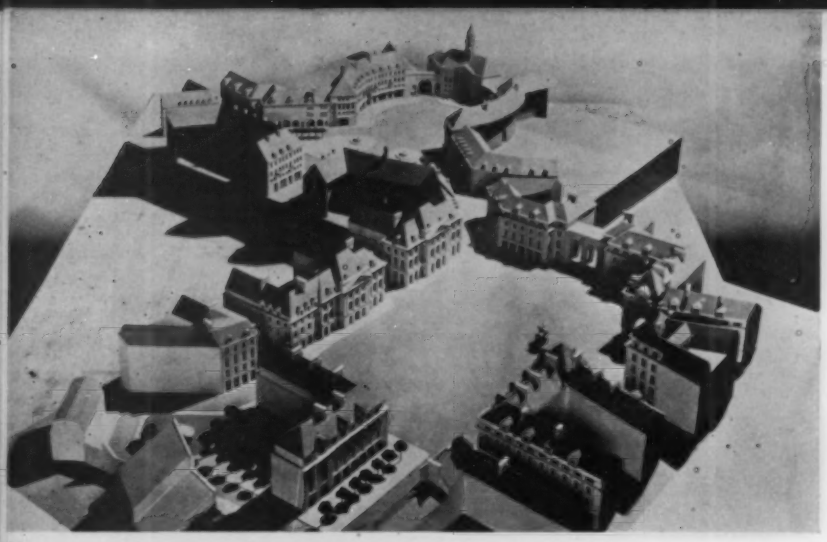


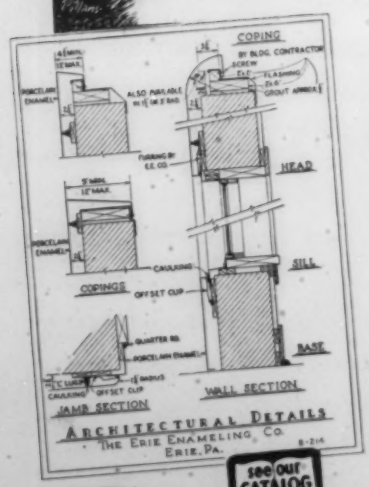
Photos courtesy French Embassy Information Division

PUBLIC HOUSING IN ORLEANS

By Léandre Vaillat

Model of Jeanne D'Arc Square, Orléans, showing apartment units

ARCHITECTURAL PORCELAIN ENAMEL
***Attracts* TRADE... *Boosts* SALES**



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WRITE *Today* FOR THIS BULLETIN

ERIE ENAMELING COMPANY
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Member of Architectural Division Porcelain Enamel Institute.

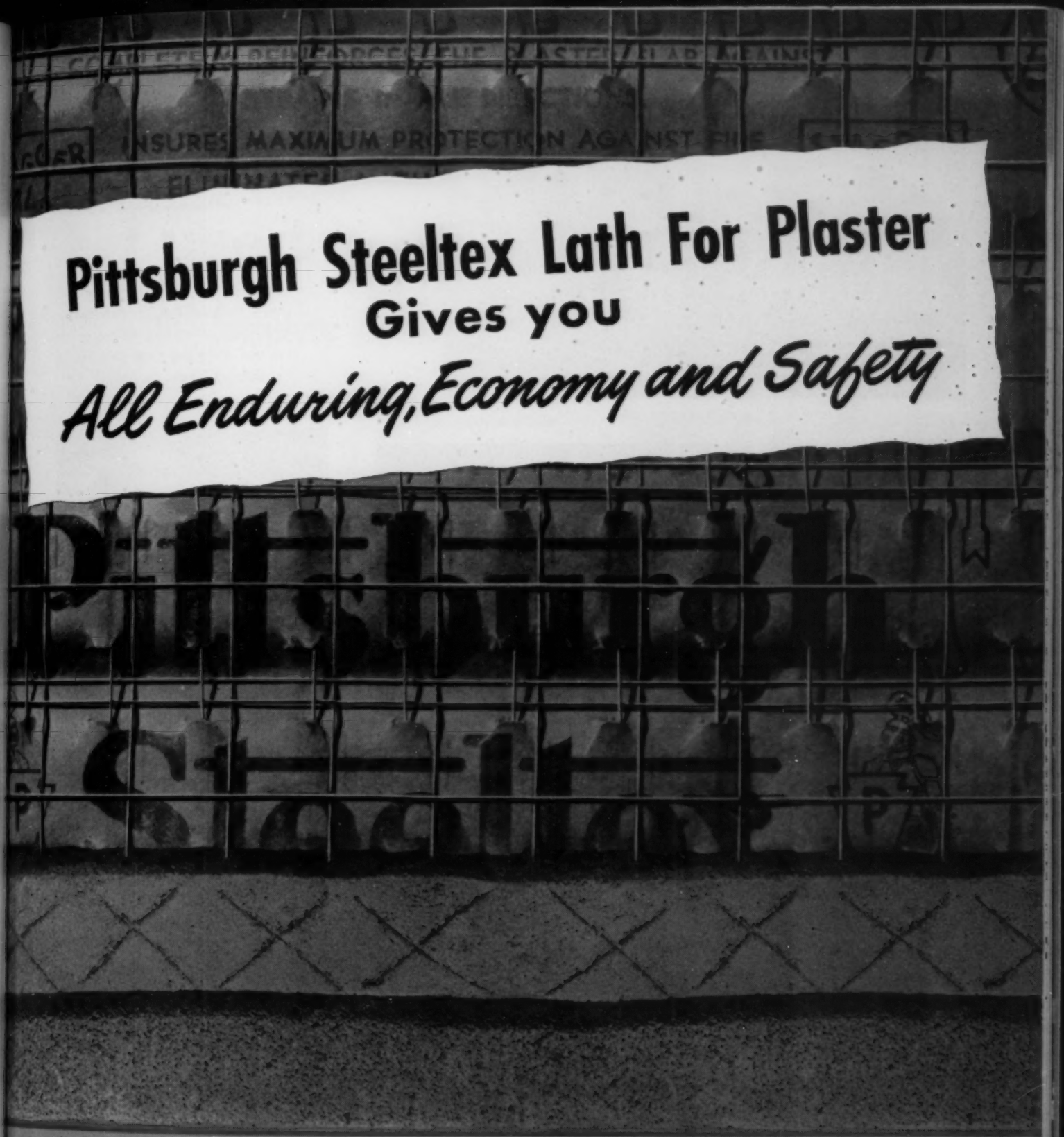
THE progress made in public housing in the old city of Orléans, France, gives good reason to hope that the French Housing Plan will be fulfilled in the relatively near future and that the summer of 1948 will see a significant revival of French domestic architecture. Pol Abraham, chief architect of the French government, and Jean Royer, author of the "plan d'urbanisme," have both played an important role in the Orléans project which calls for the construction of 90 four- and five-story apartment houses. The latter is the maximum height stipulated in the housing plans for the majority of French towns in order to preserve harmony between the old and new sections. A number of the Orléans houses are now completed and are being lived in. An objective survey of the results achieved has confirmed the economic, technical and esthetic values of the "prefabrication-montage" method as applied to buildings of which stone masonry is, nevertheless, the principal method of construction.

M. Abraham believes in modular masonry construction for the foundations and main walls, as well as in prefabrication of the lighter parts of the structure. He constructs exterior curtain walls and bearing walls on the basis of panel blocks made of precast stone and fastens them to a framework made of reinforced concrete pre-stressed according to the system devised by the engineer Freyssinet. His reasons for using this method of construction might be summarized as follows:

1. Modular masonry construction, combined with prefabrication for the lighter parts of the structure, makes it possible to utilize factory labor unskilled in the building trades. At present, there is a shortage of skilled building workers, but skilled workers normally employed in other industries which are not now operating at full capacity can be employed to advantage in the prefabricating factories.

2. This system also eliminates the innumerable hand operations of cutting, patching and ornamentation which are an integral part of traditional stone

(*Continued on page 170*)



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PUBLIC HOUSING IN ORLEANS

(*Continued from page 168*)

Left: one of the Orléans apartment units built by the "prefabrication-montage" procedure. Below: corner of one of the buildings, showing the sculptured figures by Poisson

masonry. These not only require skilled labor but delay the completion of new buildings by creating long periods in which nothing is done because the job must await the arrival of the stonemasons.

3. Modular masonry construction permits the improvement of walls from the point of view both of structure and of insulation.

4. It also eliminates excessive scaffolding and plaster rubble, frequent immobilization of machinery due to accumulated debris, and much cartage of material. Drying time is reduced and building sites can be kept cleaner.

5. The beauty of the buildings is enhanced by the fact that factory fabrication of precast stones makes possible far more beautiful and durable facings than the stucco or mortar finish traditionally used.

6. Prefabrication offers limitless possibilities for technical improvements.

M. Abraham's ideas naturally affected the entire architectural composition of the Orléans housing projects. They can be followed to full advantage only if the land on which the building is to be erected is not subjected to various legal restrictions inherent in unfavorable parceling. The "restraints" placed by prefabrication and modular masonry methods upon the composition of archi-

(*Continued on page 172*)

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"In my own home I used a Petro"

with "complete satisfaction during past nine years"

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Mr. Schwartzman puts it this way:

"I have read each month in these pages the commendations from leading architects and engineers concerning Petro Systems. I agree with them that Petro means fine performance, added economy, and satisfied clients. I base this statement, too, on the fact that in my own home, which won first prize in the House Beautiful Competition in 1939, I used a Petro Burner and its record of performance during the past nine years is one of complete satisfaction."

Such exclusive features as the Petro Thermal Viscosity Control — permitting the heavier oils to be burned *automatically* at high combustion efficiency — contribute to reliable operation at lowest cost. Along with that goes clean trouble-free heat, the result of Petro's more than 45 years' oil heat "know-how."

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cuts steam costs

Daniel Schwartzman, Architect of New York City; Vice President New York Chapter, A. I. A.; Member of Faculty, Pratt Institute Architectural School. Based on long experience in the design of many nationally known buildings, Mr. Schwartzman is another member of the ever-growing family of leading architects that endorse Petro automatic oil heat.

INDUSTRIAL MODELS: No. 5 or No. 6 fuel oil; manual, semi-automatic or automatic operation; 8 sizes to 450 bhp. Thermal Viscosity preheating.

DOMESTIC MODELS: No. 3 or lighter oils; "conversion" and combination-unit types, 7 sizes. Patented "Tubular Atomization."

FULL DATA on Petro Industrial Burners are in catalog files of Sweet's, and Domestic Engineering. Details on Petro Domestic Burners available in separate catalog. Copy of either sent gladly on request.

PETROLEUM HEAT AND POWER CO. • ***Makers of Good Oil Burning Equipment Since 1903*** • ***Stamford, Connecticut***

PUBLIC HOUSING IN ORLEANS

(*Continued from page 170*)

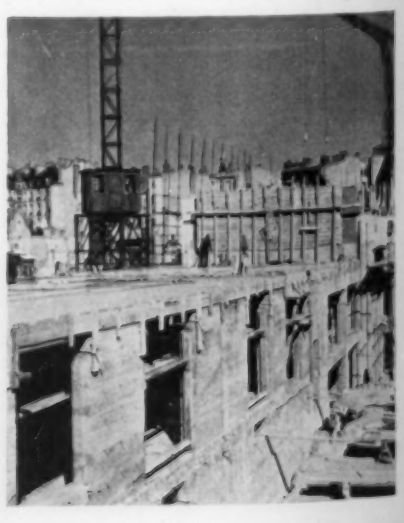
tectural façades make it necessary for the architect to accommodate himself to, and take full advantage of, a limited number of standard elements, including the following: for façades on the street, four window-blocks and facing stones (modules) of uniform proportions. The width of these stones is 52.2 cm. which figure is a factor of the only two sizes of window-blocks used: 140 and 190 cm. Their height, 80 cm., corresponds to ¼ of the uniform height of the floors, 3.2 m. Thus harmony is preserved and architectural disorder is eliminated, while the architect still has the possibility of giving an individual character to his designs.

These advantages are particularly important in a city like Orléans. Although the center of the city was destroyed by fire in 1940 and an area of 200,000 sq. m. was razed as a result of war damage, old buildings are still sufficiently in evidence — and some of them are quite fine — to require that any new construction take the old style into account. The chief characteristics of this style are, for the great public buildings and monumental ensembles like the Place du Martroi and the Rue Royale, the use of freestone, and for most modest residential structures quarrystone coated with mortar thrown on with a trowel, as is the practice throughout the Loire valley, but with freestone used extensively for the window frames, the cornices and certain moldings and dormers.

Orléans was constructed out of stone extracted from the soil and consequently rests almost entirely upon quarries. In order to reach the Beauce limestone which was originally used to build the city and provide a suitable solid foundation for new housing, excavations would have to be made to a depth of approximately 72 ft. This increases building costs by a sum equivalent to the cost of a story. Nor would it be practicable to import quarrystone from Poitou, whose quarries are some 15 miles distant, for the transportation charges involved would sharply increase the estimates. It would also be necessary to give this stone a facing, a process requiring highly skilled workers, now very scarce, and to coat it with a light white lime which is rare today. Only the Loire can furnish the sand necessary for mortar. In this respect, at least, the natural sources of the region synchronize with the needs of industry.

Several well-placed pieces of sculpture, like the female figures executed by the sculptor Poisson, individualize these great architectural units which, while they do not strictly follow the principles of the old Orléans builders, translate them into modern equivalents.

The Orléans apartments are only partly prefabricated, partly conventional



★ Plywood

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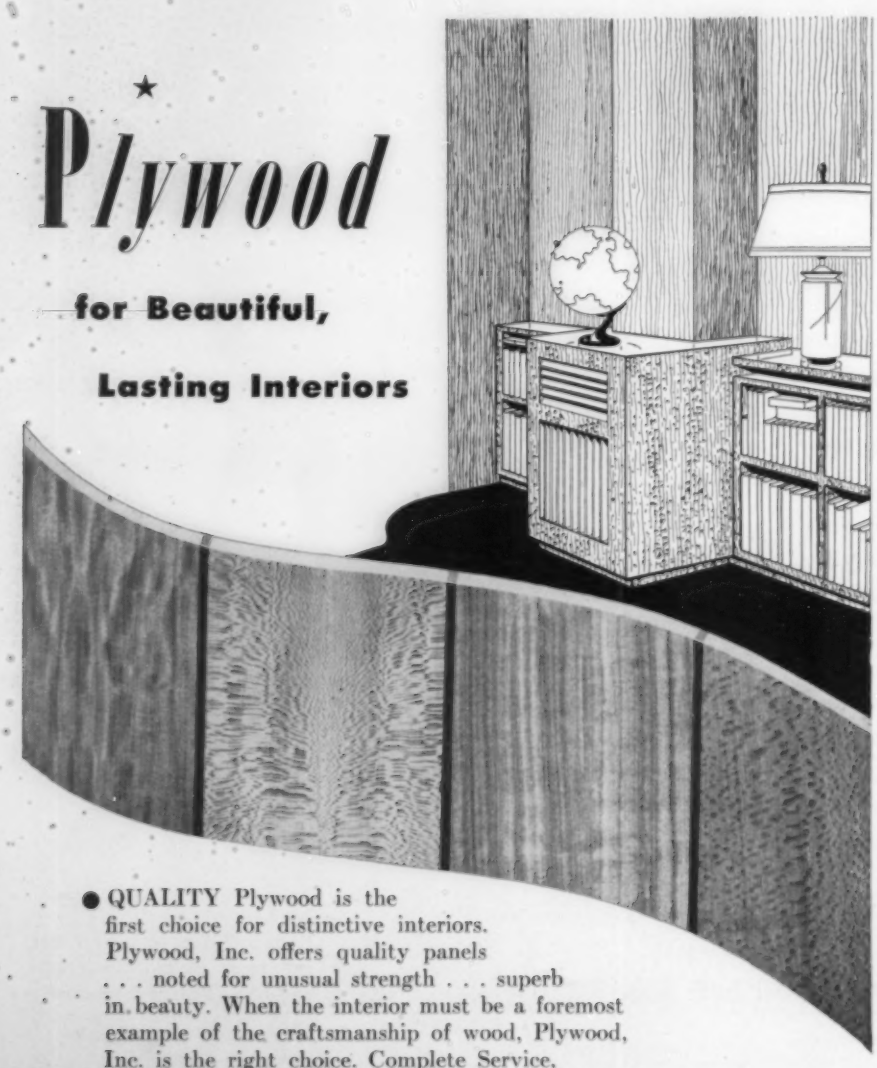
Lasting Interiors



● QUALITY Plywood is the first choice for distinctive interiors. Plywood, Inc. offers quality panels . . . noted for unusual strength . . . superb in beauty. When the interior must be a foremost example of the craftsmanship of wood, Plywood, Inc. is the right choice. Complete Service, Including Panels and Veneers to Your Specifications.

Plywood Inc.

Write to Your Nearest Divisional Branch For Complete Facts

PLYWOOD DETROIT, Detroit, Mich. — PLYWOOD GRAND RAPIDS, Grand Rapids, Mich.
PLYWOOD DAYTON, Dayton, Ohio — CLEVELAND PLYWOOD, Cleveland, Ohio
PLYWOOD TACOMA, Tacoma, Wash. — SAN FRANCISCO PLYWOOD, San Francisco, Cal. — PLYWOOD LOS ANGELES, Los Angeles, Cal.

Announcing two new colors in G-E fluorescent lamps!

1. New G-E "Soft White"

In *any* building, the most flattering light of all! Here's a new, soft light that is fresh and clear — that does wonders for homes, restaurants, stores, offices, and theaters. Tests with thousands of people prove it ideal for complexions. And it's just as complimentary to foods and surroundings. Developed after years of research with hundreds of color combinations, it's the newest thing in fluorescent.

2. New G-E "Warm Tint"

Gives you the familiar color values of incandescent! Provides a warm, rich light that creates a friendly, intimate atmosphere and softens many colors and decorative schemes. General Electric warm tint combines the warmth of incandescent lighting with the modern appearance, softness, and high efficiency of fluorescent. Blends beautifully with incandescent lights used in floor lamps and other fixtures.

These two new lamps are important additions to General Electric's fluorescent lamp line, which now gives you a wide choice of "whites" (daylight, 4500 white, white, and the new soft white and warm tint) as well as the standard colors.

For all the benefits of General Electric lamp research, always recommend lamps with this mark of quality . . .

G-E LAMPS

GENERAL ELECTRIC

MANUFACTURERS' LITERATURE

Furniture

The William. Armbruster Collection. Presented in this booklet are photographs of a comprehensive, flexible line of seating units and tables, simply and smartly designed and built to withstand the hard usage in such applications as hotels, lounges, stores, showrooms, etc.

This furniture was designed by William Armbruster especially for architects and is offered to fill the gap between ordinary commercial furniture and expensive custom built products.

A clever feature of the booklet is the inclusion of separate small photographs for paste-ups and layouts so that the booklet itself need not be cut. A data sheet lists dimensions, space required for units, and prices. 12 pp., illus. Edgewood Furniture Co., Inc. 208 E. 27th St., New York 16, N. Y.

Metal Roofs

One Metal Roof for the Life of Your Building. Offered to help architects and contractors educate customers on the importance of a good roof, this booklet discusses the destructive effect on roofs of smoke, fumes and other corrosive agents common to industrial centers. Also outlined are the requirements for a metal roof such as a low rate of expansion, stiffness and strength, fatigue strength and hardness.

Full data on a new, soft-temper *Monel* roofing sheet is presented in non-technical language. This information is part of a general discussion of the qualities required for a lasting roof with minimum maintenance.

Some of the nation's notable buildings having Monel roofs are pictured. The final section of the booklet is a fully-illustrated description of the adaptability of Monel to current architectural and roofing designs and practices. 24 pp., illus. International Nickel Co., Inc., 67 Wall St., New York 5, N. Y.

Electric Motors

Handy Guide for Quick Selection of Electric Motors. General purpose motors suitable for various industrial uses are discussed in detail.

Provided are detailed specifications covering squirrel-cage induction motors and application data, range of sizes and speed torque curves on synchronous, wound rotor and direct current motors. The booklet covers applications and features of gearmotors and multi-speed induction motors and carries an induction motor selection chart for units from 1 to 200 hp.

Controls are described; charts list the range of each type of control in voltage and horsepower. 12 pp., illus. Allis-Chalmers Mfg. Co., Milwaukee 1, Wis.

Drawer Guides

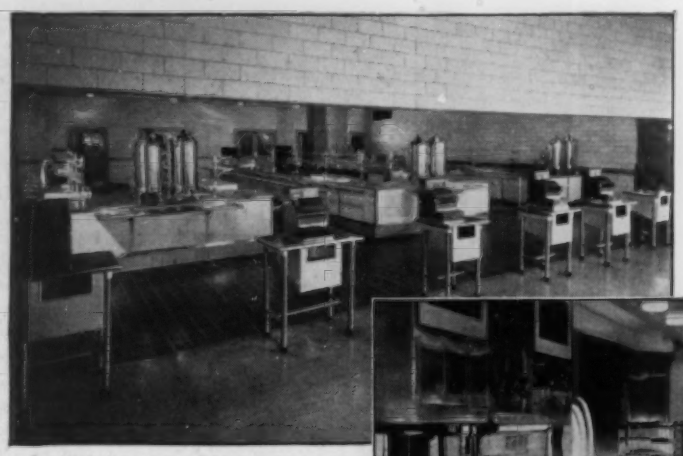
Baker Drawer Guide. Leaflet showing typical installations of a metal, two-section drawer guide which can be used for all types of drawers, cabinets and radio record changer platforms. Material, size and installation specifications are given. 2 pp., illus. B. M. Baker Engineers, Inc., 16 Campau Ave., N. W., Grand Rapids 2, Mich.

Rubber Floor Tile

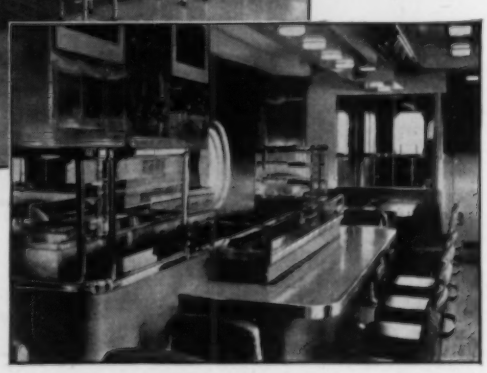
Steps to Beautiful Floors. Brochure contains full color pictures of installations and many suggested patterns of Fremont rubber floor tile. Advantages are discussed, and sizes, colors are given.

* Other product information in Sweet's File, 1948

(Continued on page 176)



Six-lane cafeteria service in large machine tool plant



cocktails to coffee at counter on Congressional Limited

Why architects rely on Van

● Institutional architects know that Van has started its second century of conscientious kitchen engineering and fabrication. They know that Van maintains construction standards. They are familiar with Van specifications. They accept Van equipment without question.

● If you have commissions involving food service, you too can rely on Van.

The John Van Range Co.

EQUIPMENT FOR THE PREPARATION AND SERVING OF FOOD

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429 CULVERT STREET CINCINNATI 2, OHIO

Sanymetal Century Type Ceiling Hung Toilet Compartments are particularly appropriate for schools. They impart dignity, refinement, and cheerfulness to the toilet room environment.

Sanymetal*

*Trade Mark Reg. U. S. Pat. Off.

"PORCENA"

(Porcelain on Steel)

TOILET COMPARTMENTS AND SHOWER STALLS

EXPEDIENCY USUALLY RESULTS IN PREMATURE OBSOLESCENCE OF BUILDING ENVIRONMENTS

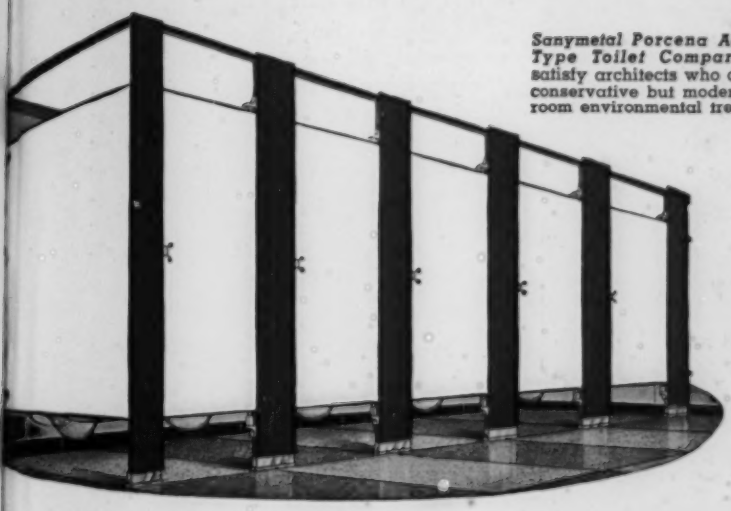
● Avoiding premature obsolescence in toilet room environments does not depend on chance. It is the toilet room environment that impresses people either favorably or adversely concerning the convenience and modernity of a building. Toilet compartments usually dominate a toilet room, give character to the toilet room environment, and emphasize the convenience of the plumbing fixtures.

Expediency sometimes suggests the use of ordinary toilet compartments. Due to the development of new types of building products, the urge to satisfy expediency should be resisted because the installation of a product merely on the basis of its availability may result in premature and costly obsolescence. There is no greater assurance against premature obsolescence in the toilet room environment than Sanymetal "PORCENA" (Porcelain on Steel) Toilet Compartments. Resist the influence of expediency that would urge the acceptance of a substitute.

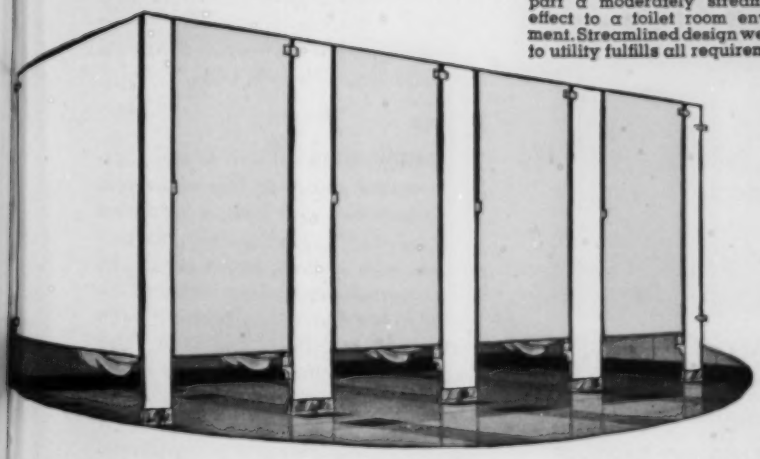
Sanymetal "PORCENA" Toilet Compartments are made in types suitable for toilet room environments in every type of building. They provide the utmost sanitation. "PORCENA" (porcelain on steel) is a material that provides the correct combination of the hardness of glass with the inherent structural strength of steel—a material which presents no vulnerable points of deterioration. Sanymetal "PORCENA" Toilet Compartments are made in a wide range of never-fade colors imbedded deep into a glass-smooth, flint-hard, non-porous surface that is moisture and rust-proof, does not absorb odors, and is impervious to ordinary acids, oils and grease. The brilliance of the glass-smooth surface can be maintained by wiping clean with a damp cloth. Sanymetal "PORCENA" Toilet Compartments embody the results of over 34 years of specialized skill and experience in making over 80,000 toilet installations.

Ask the Sanymetal Representative in your vicinity ("Partitions" in phone book) for helpful suggestions on planning modern toilet room environments to avoid premature obsolescence. Refer to Sanymetal Catalog 19-B6 in Sweet's Architectural File for 1948 or write for file copy of Catalog 85.

THE SANYMETAL PRODUCTS COMPANY, INC.
1689 URBANA RD. • CLEVELAND 12, OHIO



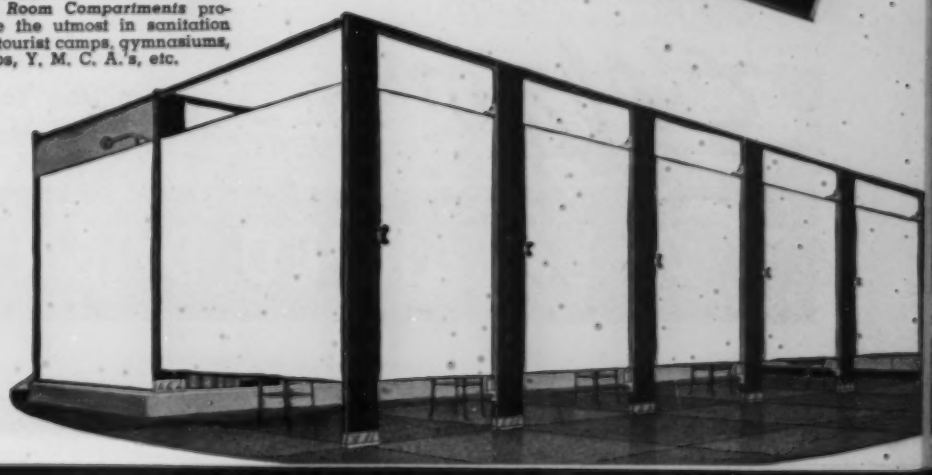
Sanymetal Porcena Academy Type Toilet Compartments satisfy architects who desire a conservative but modern toilet room environmental treatment.



Sanymetal Porcena Normandie Type Toilet Compartments impart a moderately streamlined effect to a toilet room environment. Streamlined design wedded to utility fulfills all requirements.

Sanymetal Catalog 85 illustrates several typical toilet room environments.

Sanymetal Porcena Academy Type Shower Stall and Dressing Room Compartments provide the utmost in sanitation for tourist camps, gymnasiums, clubs, Y. M. C. A.'s, etc.



Sanymetal*

*Trade Mark Reg. U. S. Pat. Off.

TOILET COMPARTMENTS, SHOWER STALLS AND DRESSING ROOMS

(*Continued from page 174*)

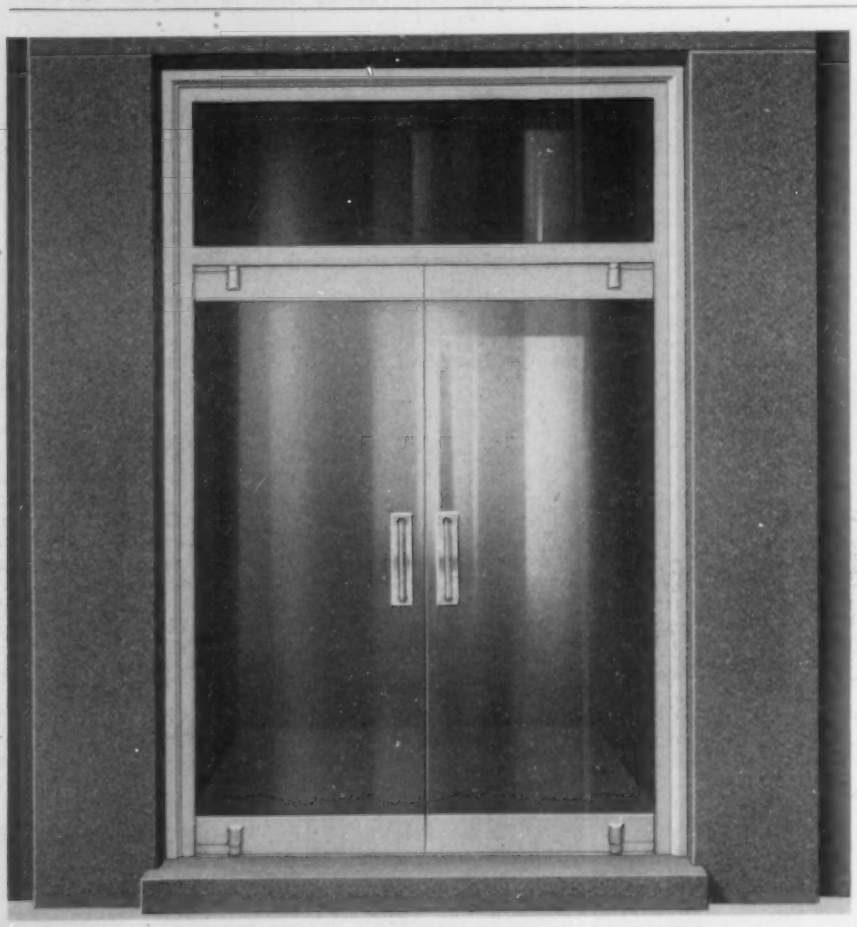
4 pp., illus., Fremont Rubber Co., 115 McPherson Highway, Fremont, Ohio.

Latex Foam

Latex Foam — A Fact Summary. Comprehensive summary of information on latex foam, the rubber cushioning material. Describes nature of the material, its advantages and widespread applications in the cushioning field. Manufacturers and their trade names for latex foam are listed. 12 pp. Rubber Development Bureau, 1631 K St., N. W., Washington, D. C.

Food Processing Kettles

Groen — Half a Century of Fine Kettles (Catalogue No. 11). Assortment of stainless steel, steam jacketed food processing kettles including pedestal and tilting types as well as coffee urns and industrial models. 16 pp., illus. Groen Mfg. Co., 4537 W. Armitage Ave., Chicago 39, Ill.



YOUR GLASS ENTRANCE WAY A SHOW PLACE

A beautiful full glass panel installation of ELLISON, the BALANCED DOOR, makes a show window of the entire building front. Patented hardware assures easy operation of the door that lets traffic through QUICKLY.

Ellison the BALANCED DOOR

ELLISON BRONZE CO.
Jamestown, New York
representatives in 68 principal cities

Metal Building Products

Majestic Building Necessities. A wide variety of metal building products and accessories are pictured and described. Included are home incinerators, garbage receivers, coal chutes, outdoor fireplace units and parts, fireplace dampers, circulator fireplaces, fireplace accessories, basement windows and several miscellaneous items. Dimensions and other specifications are included. 22 pp., illus. The Majestic Co., Huntington, Ind.*

Plastics

Plastics — Molded, Laminated. Bulletin devoted to a description of the design, moldmaking and molding facilities of General Electric Co. Plastics Division. Discusses sealing caps and sleeves, G-E mycalex, silicone rubber and high frequency insulation. High and low pressure laminates are summarized along with silent gears, bearings, decorative surfaces, translucent sheets and name plate materials. Property tables are included for reference. 15 pp., illus. General Electric Co., Chemical Dept., Pittsfield, Mass.*

Glass Block Interior Partitions

Set-in-Wood for Insulux Glass Block Interior Partitions. Folder describing uses and erection of Set-in-Wood, the mortarless system for installing Insulux Glass Block. Profusely illustrated with line sketches and photographs, the folder offers a step-by-step procedure for erecting glass block partitions with three basic units: horizontal strips, vertical strips and wedges. Example installations are shown. 4 pp., illus. American Structural Products Co., Toledo 1, Ohio.*

Valves

Dole Valves and Water Mixer. Catalogue covers complete line of air vent valves together with a chart for correct valve selection in venting radiators, convectors, unit heaters, steam mains, etc.

The second section deals with the Dole Water Mixer for use on domestic water heaters. 12 pp., illus. The Dole Valve Co., 1933 Carroll Ave., Chicago 12, Ill.

Air Diffuser

Cutting Costs Without Cutting Corners. Bulletin on new square or rectangular *Agitair RTC* air diffuser especially designed for use in acoustical ceilings. They are made in modular sizes to conform to standard tile dimensions. Illustrated are the methods of installing the diffuser in various types of suspended ceiling construction. 6 pp., illus. Air Devices, Inc., Dept. RTC, 17 E. 42nd St., New York 17, N. Y.

Wood Products

75th Anniversary Connor Forest Products. Depicts history of Connor Lumber

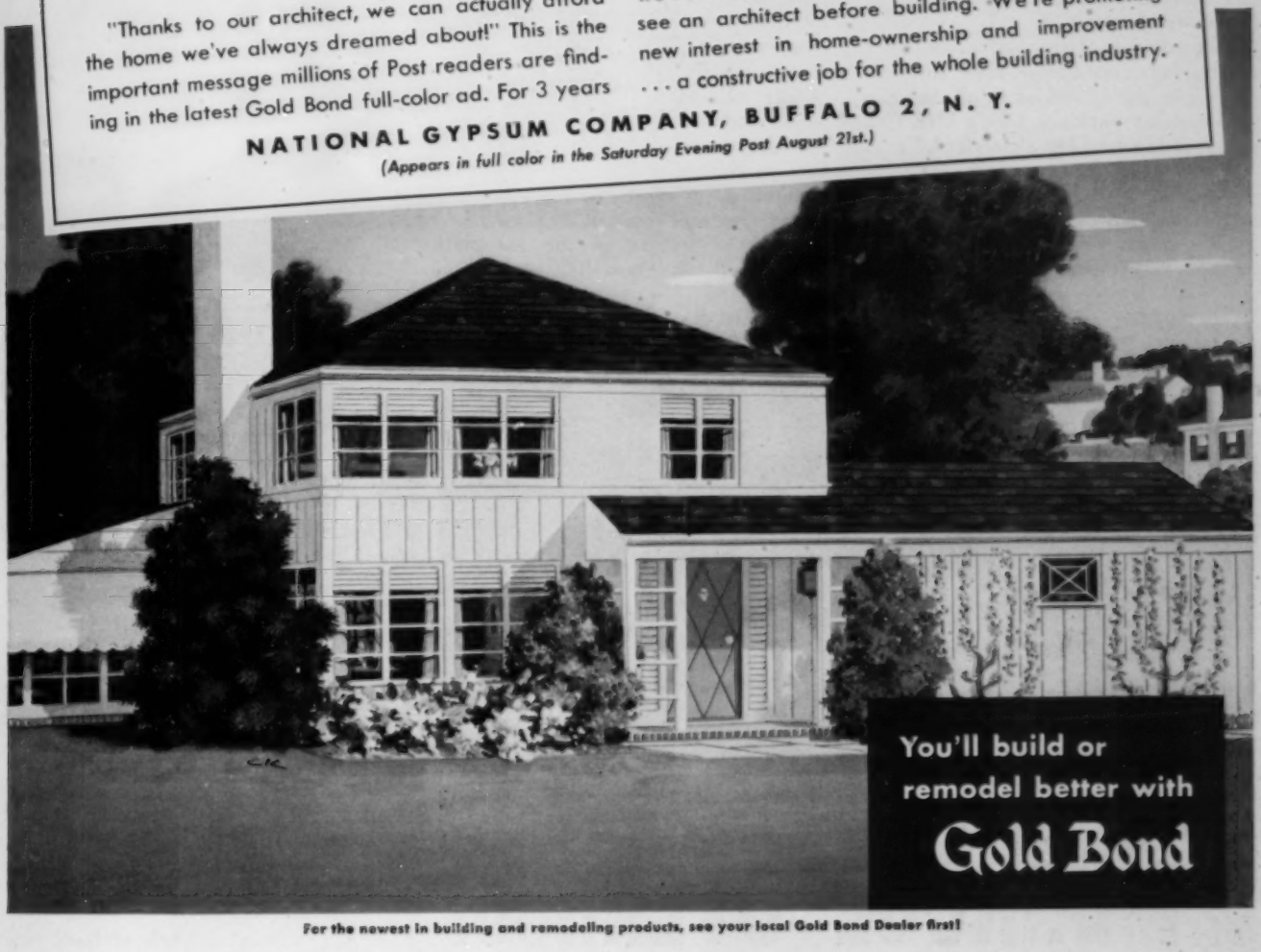
(*Continued on page 190*)

THE SATURDAY EVENING POST IS YOUR PRESS AGENT!

"Thanks to our architect, we can actually afford the home we've always dreamed about!" This is the important message millions of Post readers are finding in the latest Gold Bond full-color ad. For 3 years we've been telling America's top-buying families to see an architect before building. We're promoting new interest in home-ownership and improvement . . . a constructive job for the whole building industry.

NATIONAL GYPSUM COMPANY, BUFFALO 2, N. Y.

(Appears in full color in the Saturday Evening Post August 21st.)



For the newest in building and remodeling products, see your local Gold Bond Dealer first!

The house that fooled our own best friends

Our friends thought we'd come into a fortune when they first set eyes on our new house. But here's a secret: It isn't quite as big or even as expensive as they thought. And that's thanks to our architect and his clever use of modern building materials.

With expert planning your new house, too, can look like and actually represent a *lot* for your money. Today's building materials are the finest research has developed. They'll give you real beauty, extra long life, and most important—true fire protection.

For example every house uses sheathing under the outside finish. Old style sheathing is inflammable. And it costs *more* than Gold Bond Gypsum Sheathing, made by National Gypsum, which is fireproof and makes an extra-strong, weather-tight wall.

Another way to keep expenses down: You can save up to 40% on fuel costs if you insulate with full-thick Gold Bond Rock Wool. It's fireproof. Keeps furnace heat in. Keeps summer heat out. And acts as a permanent firestop by filling the space between framing members. For existing homes it can quickly be "blown" into outer walls and top floor ceilings. Call your local Gold Bond applicator, listed under "Insulation" in the phone directory.

Inside walls can be beautiful, long lasting, and firesafe with Gold Bond Gypsum lath and plaster. Decoration is easier with Gold Bond Sunflex, the new wall paint that dries in an hour with no "painty" smell.

More than 150 Gold Bond Products are available through your local Gold Bond lumber and building material dealer. Each is engineered to do a specific job better. When you plan to build or remodel, see your Gold Bond Dealer first for helpful advice.

NATIONAL GYPSUM COMPANY
BUFFALO 2, NEW YORK

Gold Bond Building Products add greater fire protection, permanency, and beauty at no extra cost. These include fireproof wallboard, lath, plaster, lime, sheathing, wall paint, insulation, metal lath and sound control products.

CUT WINTER HEATING COSTS UP TO 40%
INSULATE THE WALLS AND TOP CEILING WITH FIREPROOF GOLD BOND ROCK WOOL BATTS
Gold Bond
THIS BLANKET OF INSULATION AROUND THE HOUSE KEEPS FURNACE HEAT IN... SUMMER HEAT OUT
INSULATE OLD HOMES WITH GOLD BOND ROCK WOOL "BLOWN" INTO WALLS AND ROOF!

(*Continued from page 152*)

per hour; at peak load 60 racks can be processed.

The principle of over and under power wash plus a sanitizing rinse are employed in the CU-16 as in all Autosan dishwashing machines. Colt's Mfg. Co., Autosan Machine Div., Hartford, Conn.

SCHOOLROOM DESK

Introduction of the *Ten-Twenty* balanced-posture schoolroom desk is described as the answer to most visual and postural problems, when used in conjunction with proper classroom lighting, either natural or artificial.

The desk top is said to be quickly and easily adjustable to three positions — a 20° slope, a 10° slope, and level.

With the desk top at 20°, text books are readily available; yet the pencil groove is designed so that pens or pencils are still retained.

Another feature is the automatic "fore and aft" seat adjustment for establishing focal distance for all work — whether reading, writing, drawing or manipulative tasks.

The new desk has a natural finish reported to relieve eye-fatigue by reducing the brightness ratio between desk top and white papers or book pages to less than 3 to 1.

Desk top is adjustable to three positions

Other features retained from former models include: one-piece steel book-box; cradle-form seat; chair movement 45° either way from the front. The one-piece, positive height adjustment clamps make possible variable seat or desk heights. American Seating Co., 9th and Broadway, Grand Rapids, Mich.

AWNING FABRIC

A new awning fabric of fused glass fibers is coated with *Vinylite* resins to make it resistant to fire, mildew and weather. Because of its non-absorptive quality this fabric is said not to wilt or stain. Grease soot or dirt is reported easily removed with soap and water, restoring the fabric to original beauty even after long use and exposure. The awning fabric, available in ten colors, is said to have exceptional strength and to be applicable for many other canvas-type uses. The Holton Corp., Hibernia Bldg., New Orleans 12, La.

MASONRY PAINT

Developed for use on cinder blocks, concrete blocks and other porous masonry is a paint known as *Cabot's Concrete Sealer Finish*. According to the manufacturer, this new paint shuts out moisture and forms an attractive, durable finish. The paint comes in paste form and is thinned with water. Four colors are available — oyster white, gray, red and buff; they may be tinted with oil paint to any other color desired. Samuel Cabot, Inc., 33 Oliver Bldg., Boston 9, Mass.

(*Continued on page 180*)

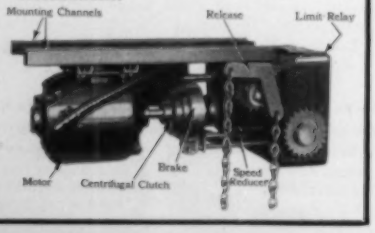
THE BARCOL OVERdoor
WITH ELECTRIC OPERATOR
FOR PUBLIC GARAGE SERVICE ENTRANCES

Barcol OVERdoors and Barber-Colman Electric Door Operators are the ideal combination for openings in public garages, automobile agencies, service stations, and other establishments where traffic is heavy. They operate easily, quickly, efficiently . . . provide convenience and valuable time-saving both to garagemen and their customers.

Only Barcol OVERdoors offer all these distinctive features: exclusive cam-controlled action for weathertight closing without sticking or binding; tailored twin-torsion springs for safe, accurate counterbalancing; and continuous vertical track brackets for strength and durability.

Couple these features with quality construction and guaranteed installation by factory-trained representatives and you have doors that give dependable, trouble-free service at lowest maintenance cost. Barcol OVERdoors are adaptable to existing buildings as well as new construction. *Consult your Barcol representative for complete details.*

Dependable Barcol Electric Door Operators increase convenience, minimize time-loss, heat loss, operating costs. Applicable to most types of installations.



Consult classified directory for local Barcol representative.

FACTORY-TRAINED SALES and SERVICE REPRESENTATIVES in PRINCIPAL CITIES

BARBER-COLMAN COMPANY
102 MILL ST. • ROCKFORD, ILLINOIS

WEISWAY

IS THE MODERN BATH FOR MODERN HOMES

QUALITY BUILT, of service-tested materials, Weisway Cabinet Showers exemplify the latest and best in building techniques. Factory-fabricated to precision tolerances, Weisways are easily, quickly installed as self-contained, leakproof baths, without special treatment of building walls or floor. Completely built-in effect is achieved through the use of the Weisway In-a-Wall Adapter.

Receptor is vitreous porcelain enamel on Armco iron with exclusive Foot-Grip, No-Slip floor—light in weight, guaranteed leakproof, easy to keep clean and sanitary — safe, wet or dry. Weisways provide the practical answer to the insistent demand for separate shower baths in modern homes. Write for detailed information. Henry Weis Mfg. Co., Inc., 903 Weisway Building, Elkhart, Indiana.

Weisway **CABINET SHOWERS**

ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

(*Continued from page 178*)

GLASS BLOCK

Prismatic, light-directing glass blocks for exposure to direct sunlight and soft-light edge blocks to control brightness contrast between edges and block faces have been reported developed by the Pittsburgh Corning Corp.

The soft-light edge block is said to have been achieved by introducing an intermediate glass composition between the halves of glass blocks during the sealing operation to control light diffusion and edge brightness. This edge is claimed to transmit just enough light to provide a comfortable transition between the lighter block surface and the darker mortar joint. Pittsburgh Corning Corp., 632 Duquesne Way, Pittsburgh, Pa.

GARAGE VENTILATION

An underfloor ventilation system for garages has been engineered recently to provide effective removal of exhaust gas.

The National System comes completely packaged with equipment capable of serving four cars; additional service can be added.

Included in the ventilating system are flexible metal tubes to carry exhaust gas from the tailpipes to floor vent plates; fabricated duct work to conduct exhaust to the outside; roof flange and weather hood; motor and discharge chamber blower. Duct work up to the blower is designed to be encased in the concrete floor. The National System of Garage Ventilation, 330 N. Church St., Dept. M4, Decatur, Ill.

Car exhaust is fed through flexible tubes to floor ducts and then vented outside

TABLE-HIGH REFRIGERATOR

Available especially for apartments, small homes and other space-saving applications is a table-high refrigerator of 3.5 cu. ft. capacity. The *Lo-Boy* is 34½ in. high, 24 in. wide and 22½ in. deep, and can be installed flush against a stove, cabinet or wall due to the special extended hinges.

Added utility is achieved, when desired, through the use of a formica top which enables the refrigerator top to be used as a kitchen table. This top increases the height of the refrigerator to 36 in., and thus provides a surface that is flush with standard dimensioned sink and cabinets.

The cabinet liner is of all-welded construction, finished in vitreous enamel. Exterior is finished in white enamel over rust-proofed steel. Condensing unit is ⅛ hp Freon-12 and is available for either 110 or 220 volts. Moss Atlas Corp., 244 Herkimer St., Brooklyn 6, N. Y.

ELECTRIC WATER HEATER

A new 40-gal. table-top water heater has been designed by General Electric Co. primarily for use in the kitchens of small, basementless houses — it occupies no more space than the present 30 gal. model.

The heater is 24 in. wide, 25⅛ in. deep and 36 in. high. It has a 3½ in. backsplash corresponding to that on standard kitchen counter tops.

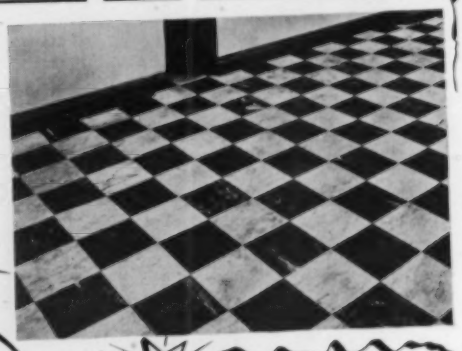
Water is heated by *Calrod* units which encircle the galvanized steel tank. Standard equipment for the heater is

(*Continued on page 182*)

THE SENSATION IN FLOORS!

TAILORIZED FLOORS BY FREMONT...

...floors that are stylized to meet every preference... an endless variety of beautiful patterns to match every situation. Every installation can be different.



FREMONT RUBBER TILE AFFORDS ADVANTAGES NOT TO BE HAD IN ANY OTHER!

- DISTINCTIVE, LASTING BEAUTY — Colors go all the way through the tile, can't show wear. Non-fading. Loveliness to be admired throughout the years.
- EASE OF CLEANING — Sweeping or light mopping keeps it spotlessly clean, looking like new.
- SOUND CONDITIONING — Suppresses the sound of noisy, irritating, distracting footsteps.
- COMFORT UNDERFOOT — Cushions every step, lessens fatigue.
- RESISTANCE TO WEAR — Lasts practically forever. Withstands heaviest traffic, denting, scuffing. Burning cigarettes leave no permanent blemish. Grease-resistant.
- SAFETY UNDERFOOT — Great non-slip properties.
- UTMOST SANITATION — No pores to hold dirt.
- VARIETY OF RICH COLORS — Eleven solid and marbleized combinations.
- EASE OF APPLICATION — Lies flat. Cut accurately. Uniform thickness.

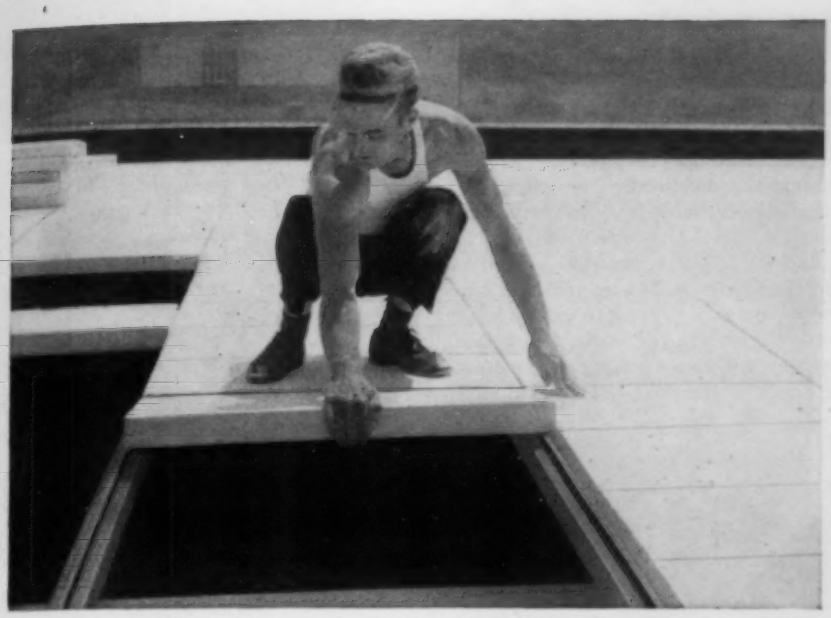
FREMONT rubber

It is easy to select or originate a pattern which takes into consideration the elements of room size, location, temperature, lighting, traffic, furnishings, business aims and desired psychological effects.

WRITE FOR FREE DESCRIPTIVE LITERATURE TODAY

FREMONT RUBBER COMPANY

115 McPherson Highway, Fremont, Ohio



LIGHTWEIGHT. Kaylo Insulating Roof Tile is strong, yet lightweight and easy to handle, as shown above. Each tile is 2⅜ x 18 x 36 inches in size, weighs about 21 pounds.

EASY TO FIT. Kaylo Insulating Roof Tile can be cut and fitted with ordinary hand or power tools. Picture above shows example of re-entrant cut made to fit around stack.

Make your roof deck fireproof . . . lightweight and strong

With Kaylo Insulating Roof Tile

STRUCTURAL strength, extreme lightness and high insulating qualities—you can get all these in your roof with one material: Kaylo Insulating Roof Tile.

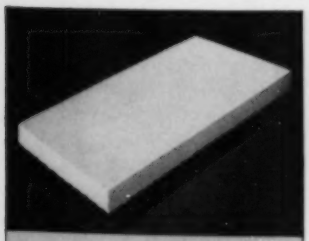
Kaylo Roof Tile is made of inorganic materials only, and is fireproof.

Whether you're an owner, builder, architect or engineer, Kaylo Roof Tile has many advantages for you. It is easy to install, can be cut to fit right on the job. Its insulating properties reduce fuel costs.

Because Kaylo Roof Tile makes a structural deck that is light in weight, less steel is needed for framing. Get all the facts about Kaylo Insulating Roof Tile . . . send coupon (below) for free illustrated booklet.

VERSATILE. Kaylo Insulating Roof Tile can be used with many types of construction—with special American Structural Products Company sub-purlins, or standard structural shapes.

GROUTING is done when Kaylo Roof Tiles have been laid. After grouting is completed, roof is covered with conventional built-up asphalt or tar and gravel roofing. No additional insulation is necessary.



KAYLO®

Insulating Roof Tile

AMERICAN STRUCTURAL PRODUCTS COMPANY

Subsidiary of

OWENS-ILLINOIS GLASS COMPANY

All pictures on this page are of the new Morton Hosiery Mills plant in Runnemede, N. J., Henry Skierski, Owner; Charles C. Duffin, Berlin, N.J., Contractor; W. D. Faint & Company, Delair, N. J., Engineers.

SEND COUPON FOR FACTS

AMERICAN STRUCTURAL PRODUCTS COMPANY
Dept. E-417, P.O. Box 1035
Toledo 1, Ohio

Gentlemen:
Please send me free illustrated booklet, "Kaylo Insulating Roof Tile."

Name_____

Address_____

Firm Name_____

City_____ Zone____ State_____

☐ Request for sample is enclosed on company letterhead.

(*Continued from page 180*)

either one or two heating units. Each unit has its own thermostat. General Electric, Appliance & Merchandise Dept., Bridgeport 2, Conn.

FIRE PROTECTION SYSTEM

An unobtrusive fire protection system is available in the Grinnell *Quartzoid Ceiling Sprinkler* which is fed by concealed piping.

Nothing but the deflector supported by its arms and the Quartzoid bulb show below the smooth level of the ceiling. The narrow ring which closes the opening through the plaster can be brushed-chrome finished or painted to be indistinguishable from the rest of the ceiling surface.

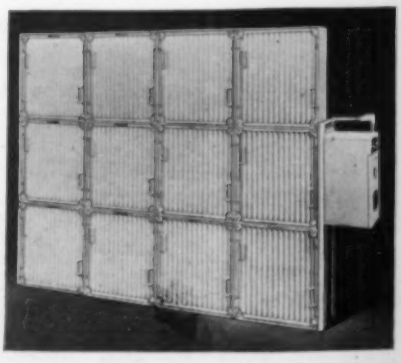
Should fire occur, improved distribution of water is said to be provided by a new deflector, designed to assure effectiveness from the first sprinkler opened. Temperature at the ceiling over a starting fire has to reach only 135° F to burst the Quartzoid bulb, release the water and begin extinguishing the fire. This is said to be 30° F lower than the rating for conventional fusible sprinklers in order to extinguish small fires before they spread. Grinnell Co., Inc., 260 W. Exchange St., Providence, R. I.

Only elements exposed in fire extinguisher system are Quartzoid bulb and deflector

ELECTRONIC AIR FILTER

An electronic air filter, the *Electro-PL*, has been developed, according to the manufacturer, with an intermediate cleaning efficiency for applications where efficiency of a mechanical filter is too low and that of an electronic precipitator too high.

The new filter is basically an electronic precipitator without an ionizing unit and contains a collector element of electrostatically charged *Airmat* paper. When an electrostatic charge is applied to the paper, its laminated plies tend to separate and each fibre becomes a collecting electrode which attracts and holds dust and smoke particles. This action is claimed to double the efficiency of Airmat paper.

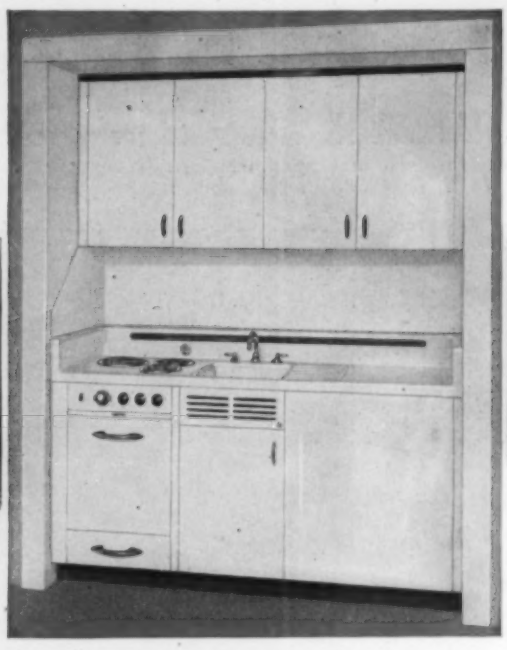


Electronic air filter uses charged paper

The Electro-PL is reported to function efficiently as an air filter even when de-energized, providing variable operation for different dust conditions. American Air Filter Co. Inc., 215 Central Ave., Louisville 8, Ky.

(*Continued on page 184*)

A luxury kitchen . . .
Designed for hard usage
in Rental Properties!



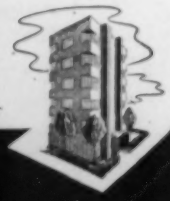
MURPHY-CABRANETTE KITCHENS

PORCELAIN ON STEEL

You'll recognize tenant-appeal in the front of gleaming white porcelain . . . in the convenience of modern refrigeration with push-button door and stainless steel frozen food compartment, with modern gas or electric range, with roomy upper storage cabinets and with the large deep bowl sink in the one-piece top of porcelain . . . all skillfully streamlined into one compact unit.

You'll value the saving in valuable floor space that is practical with any Murphy-Cabranette Kitchen.

You'll be long satisfied with the trouble-free operation and almost negligible maintenance costs.



DWYER PRODUCTS CORPORATION
Dept. F7 — MICHIGAN CITY, INDIANA

New H&H No. 9260

BACK-WIRED (or side wired) DUPLEX

CONVENIENCE OUTLET

T-SLOTS • DOUBLE SIDE CONTACTS
PLASTER EARS

This advanced design provides for either *back* wiring or *side* wiring with equal facility. Back-wiring feature makes easier, more secure installation. Built-in stripping guide assures correct stripping; eliminates exposed wire. Individual terminal clamps hold wires with a no-slip grip. Other structural features are:

- Large Recessed Binding Screws
- Ample for No. 10 Wire
- Strong Plastic Base
- Double T-Slots
- Double Side Contacts
- Washer Type Plaster Ears

Large recessed binding screws, ample for No. 10 wire;

Strong plastic base;

Double T-slots;

Double side contacts;

Washer type plaster ears.

Listed as standard by Underwriters Laboratories, Inc. and meets all high-grade specifications. Specify No. 9260 for brown plastic base; No. 9260-I for white Ivorylite.

10 AMPS. — 250 VOLTS **15 AMPS. — 125 VOLTS**

Mail this Coupon

To Arrow-Hart & Hegeman Electric Company, Hartford 6, Conn.

Send us your catalog data-sheet on the new 9260 Back-Wired Duplex Convenience Outlet.

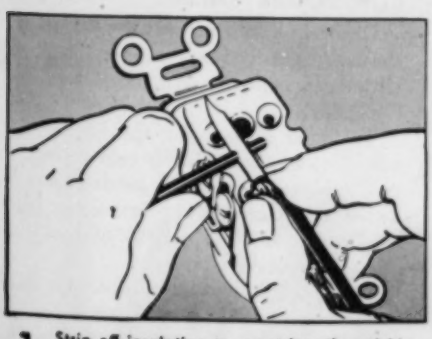
(*Name*) _____

(*Firm*) _____

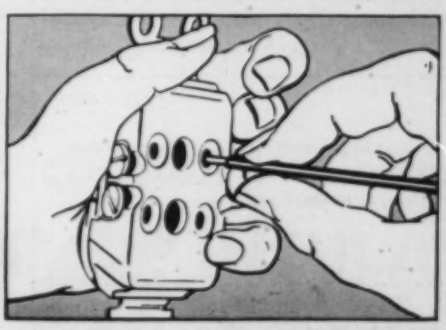
(*Address*) _____

(*City & State*) _____

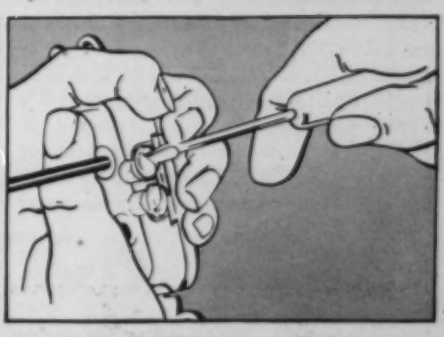
THE ARROW-HART & HEGEMAN ELECTRIC COMPANY, HARTFORD 6, CONN., U.S.A.



1. Strip off insulation to exact length, quickly and easily, using built-in stripping guide.



2. Loosen terminal screw — Wire stripped to correct length is inserted from back.



3. Tighten terminal screw — Individual clamps grip securely with no exposed wire.

ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

(*Continued from page 182*)

THERMOPANE WINDOWS

Large units of *Thermopane*, the insulating glass, are now being made for either window walls of the open type house or for picture windows.

Demand for additional widths has required the addition of three new widths of standardized sizes to the line; they are 56½, 64½ and 72½ in.

There are now more than 70 standard sizes of Thermopane including a wide range of smaller sizes to fit the double-hung windows of the average home, office building or other type of conventional structure. Libby-Owens-Ford Glass Co., Nicholas Bldg., Toledo 3, Ohio.

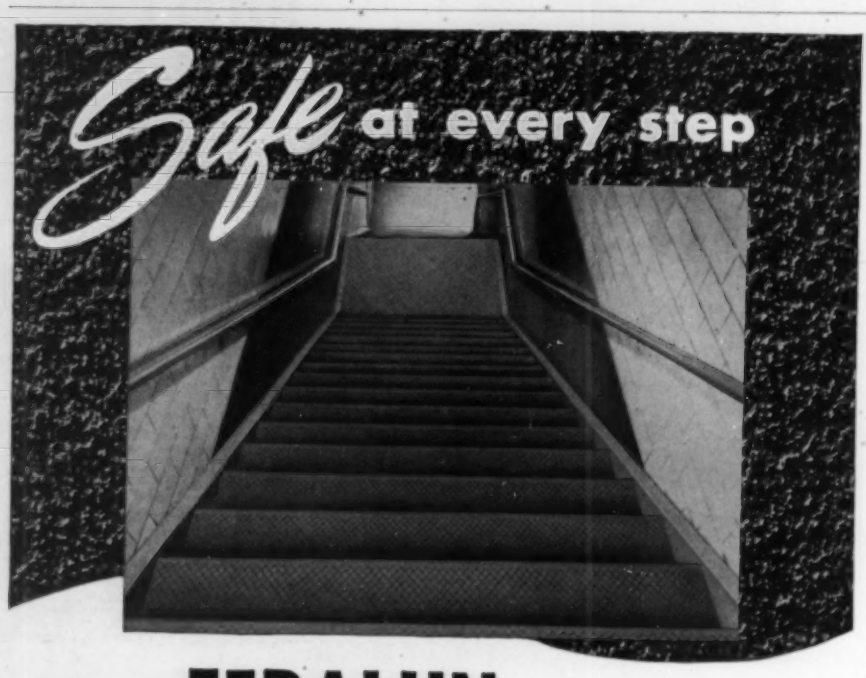
INDUSTRIAL WATER COOLER

High capacity of a new industrial type water cooler is said to make possible a complete cooling system without the use of space-consuming water tanks.

The cooler, known as *Temprite*, measures 14 in. in dia. by 54 in. high; the compactness is said to be a result of a special cooling principle which gives rapid heat transfer.

This cooler is designed to deliver, for example, 1185 gal. of 40° water per hr. assuming a 60° inlet temperature. Water or other liquids such as alcohol, light oils, beverages, etc. are cooled only as required, eliminating unecessary operation of the refrigerating machine. With the aid of an automatic control valve liquid temperature is said to remain constant whether a small or full load is imposed on the cooler. Temprite Products Corp., 47 Piquette Ave., Detroit 2, Mich.

Industrial water cooler has high capacity



WITH **FERALUN** SAFETY TREADS

Workmen at the Curtiss Wright Plant, Propeller Division, Caldwell, N. J., go up and down these stairs . . . safe at every step.

Their shoe soles come to grips with non-slip Feralun Safety Stair Treads, cast iron, with wear-resistant abrasive embedded right in the walking surface.

Heavy traffic day in, day out — — but Feralun Safety Treads, built to take hard use, stay non-slip . . . last and last.

And that means low maintenance . . . and high safety.

4 TYPES:

Cast iron base . . . . . FERALUN
Bronze base . . . . BRONZALUN
Aluminum base . . . ALUMALUN
Nickel bronze base . . NICALUN

3 SURFACE STYLES:

hatched . . . plain . . . fluted

Use coupon below to get our free, illustrated catalog. Also consult Sweet's File, Architectural, 13 a-8.

AMERICAN ABRASIVE METALS CO. (AR 9-48)
460 Coit Street Irvington, N. J.

☐ Please send me your catalog on non-slip stair treads, floor plates, thresholds, elevator sills, and safety tile.

☐ Please have one of your safety engineers contact me.

Name..... Title.....

Company.....

Street.....

City..... State.....

HOUSE NUMBERS

One of the main features of the *Cambrite* model 33 house numbers is their permanence. They are 3 by 2 in., made of clay, and embody a bevelled cushion edge and black numeral sealed under a clear white glaze. The numbers are claimed not to rust, fade, stain or tarnish. Also available are black finished aluminum frames in sizes holding from one to five numbers. The Cambridge Tile Mfg. Co., Dept. 15, Cincinnati 15, Ohio.

CONTROLLER VALVE

Desired water temperatures in outlets, showers, faucets is reported maintained with a new control valve, the *Tempering-Controller*.

Designed to last for the life of the installation, this valve is said to maintain accurately constant, predetermined water temperatures at its outlet, regardless of heater tank or of tankless heater operation.

The control valve may be set for any desired discharge temperature between 100° F and 170° F. Setting is made on a

(*Continued on page 186*)

Radiant Heating Systems Can Lose 60% Heat—and More thru Improper Insulation

Infra thermal factors stamped on every carton

RADIANT HEATING VIA CEILINGS

Radiant heating from above is intended to warm the 90% emissive ceiling below, which in turn radiates heat to the room. But without proper controls, like Infra, less than 50% of the heat from the panel ever reaches the ceiling since heat flows by radiation and conduction in every direction. Furthermore, when the area above the panel is colder than the ceiling below, then, since heat flows to cold in radiation and conduction, only a fraction of panel heat reaches the ceiling. ALL convected heat, since it flows up, is also lost.

Putting Infra Insulation above the panel reflects 97% of the upward flow of radiant heat down again to heat the ceiling. Upward flowing conducted and convected heat are blocked. No more than 3% of ALL heat reaching the surface of Infra away from the heat source is emitted.

RADIANT HEATING VIA FLOORS

Where radiant heating operates upward from the floor, heat losses by conduction through solids are great. Heat flows by conduction in every direction. It also follows the law that heat flows to cold.

Naturally, there is a greater flow of heat to the colder, greater mass of earth below than to the floor above. Properly installed with air spaces under the heating panel, Infra saves most of the heat otherwise dissipated.

INFRA PRODUCES HEATING ECONOMIES

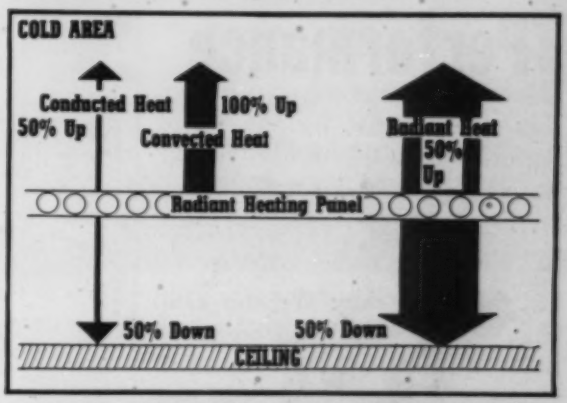
Infra Insulation increases comfort, reduces fuel costs, makes less expensive heating installations possible.

Write for free samples and our free 32 pp. booklet: *"Simplified Physics of Thermal Insulation."* Address Dept. AR.

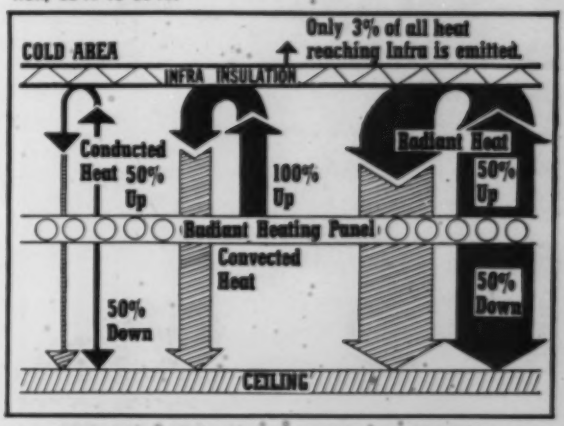
Architects and engineers use it as a handbook, and colleges as a text, on Heat Transfer, Condensation, Vapor, Mold, etc. Contains master chart of *k*, C, R, and U factors of all insulations, of all thicknesses, densities, weights, etc.

INFRA C FACTORS and Rockwool Equivalents

C .052 Heat Flow Down, equals 6" Rockwool.
C .083 Heat Flow Up, equals 3.97" Rockwool.
C .10 Lateral Heat, equals 3½" Rockwool.



HEAT FLOW IN AIR SPACES WITH IMPROPER INSULATION
By Conduction, 5% to 7%; Convection, 15% to 28%; Radiation, 65% to 85%.

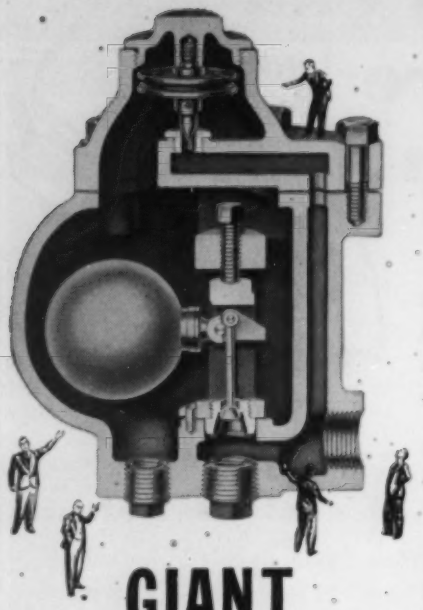


HEAT FLOW WITH INFRA INSULATION CONTROL
Of ALL heat, radiant, conducted and convected, wastefully flowing UP, only 3% is emitted from Infra's upper surface.

Infra Accordion Aluminum Insulation

INSULATION, INC.

10 Murray St., N. Y., N. Y.



GIANT Performance

You can benefit by the Giant Performance of this sturdy Webster Trap by specifying it for buildings requiring low-pressure steam heating.

It's the heavy-duty Webster Drip Trap—for returning air and water of condensation to the basement promptly and continuously. Proper condensate drainage means:

(1) Fast, quiet, trouble-free heating

(2) Positive, controllable steam circulation

Webster Float and Thermostatic Drip Traps are made for the pressure and capacity conditions encountered at all drip points—15 to 150 lbs. per sq. in. Used on process equipment and unit heaters as well, wherever continuous draining and overload capacity are required.

Your client will have no complaints of sluggish steam circulation with Webster "F&T" Traps. Factual data sheet on request.

Address Dept. AR-9

WARREN WEBSTER & CO.
Camden, N. J. : : Representatives In Principal Cities
In Canada, Darling Brothers, Limited, Montreal

Webster HEATING

ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

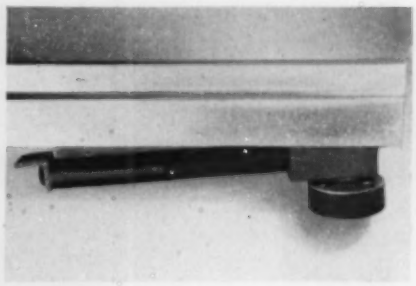
(*Continued from page 184*)

dial calibrated in 10° units with a 5° space in between. Valves are available in ¾ and 1 in. sizes. Approximate capacity of the ¾ in. valve is said to be 20 gpm at 50 psi, with capacity of the 1 in. size as about 35 gpm at 50 psi. Symmons Engr. Co., Boston, Mass.

DOOR CLOSER

Especially designed for glass and metal doors is a new check and closer, the *Rice Hinge*, made so that the operating mechanism is entirely contained within the door itself.

The closing device is fitted into a channel at the bottom of the door and sets in a socket which is fastened to the floor. The small (3½-in. dia. and 1⅛ in. deep) floor socket is designed for fast, simple installation in any type of construction.



Check-closer for glass and metal doors is inserted into door channel; operating mechanism is concealed when completed

Due to its balanced load distribution, this hinge is said to permit fingertip operation up to its "at ease" position, 90° on either side. The *Model 17* hinge is claimed not to jam and to allow free movement in either direction.

A prominent feature of the hinge is that its application is said to permit the use of modern doors unmarred by holes in the door rail and to eliminate a large box installation in the floor. Rice Engineering Co., 702 E. Gage Ave., Los Angeles, Calif.

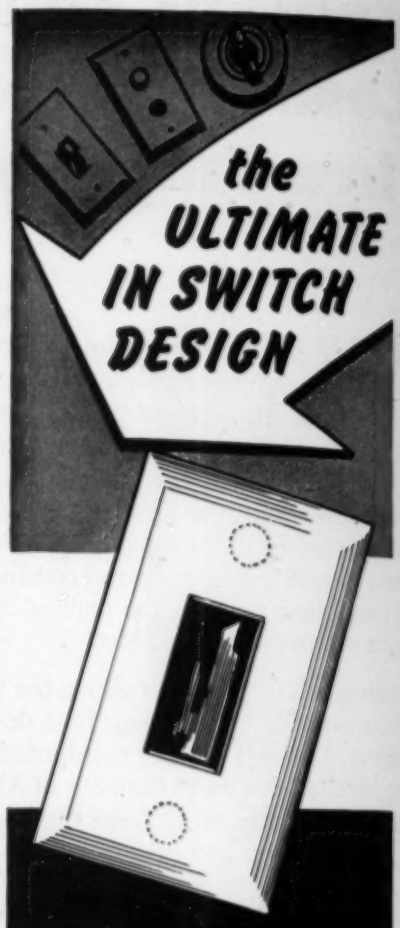
ELECTRIC SPACE HEATERS
Infra-Red

An electric wall heater with fan-forced circulation has been introduced with a rated capacity of 1600 watts for either 110–120 or 220–230 volts.

A high-volume, non-turbulent fan is used to force air through what are described as scientifically dimensioned ducts, keeping the case cool.

The *Titan Infra-Red Wall Heater* is said to be as easily installed as an outlet

(*Continued on page 188*)

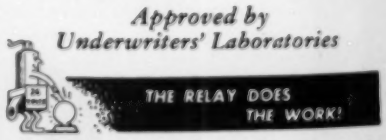


TOUCH-PLATE
LOW VOLTAGE
LIGHT CONTROL SYSTEM

Smooth, simple, streamlined beauty is one of the great features of the amazing new Touch-Plate switch...but it's only a by-product! Operating with a feather-touch on and off action, low voltage Touch-Plate switches require no conduits...allow for any combination of multiple controls at virtually the same cost as old-fashioned installations! Let us tell you the whole story....

CONVENIENCE
BEAUTY
SAFETY

Approved by Underwriters' Laboratories



TOUCH-PLATE
DISTRIBUTORS, INC.
2038-42 Bay Street
Los Angeles 21, California

Specify **GENUINE LALLY COLUMNS**

FOR THE MODERN OR TRADITIONAL HOUSE

GENUINE LALLY COLUMNS have proven to be most practical for all types of home building. These space-saving, graceful columns are equally adaptable for use in exposed basement areas, covered courts or porches, or between wall construction.

GENUINE LALLY COLUMNS are manufactured in single or multiple story lengths and are the ideal structural support in all types of construction.

SEND FOR CATALOG OF CONSTRUCTION DETAILS

Morgan House, Scarsdale, N. Y.
John R. Weber, Architect

GENUINE LALLY COLUMNS SPECIFIED AND USED

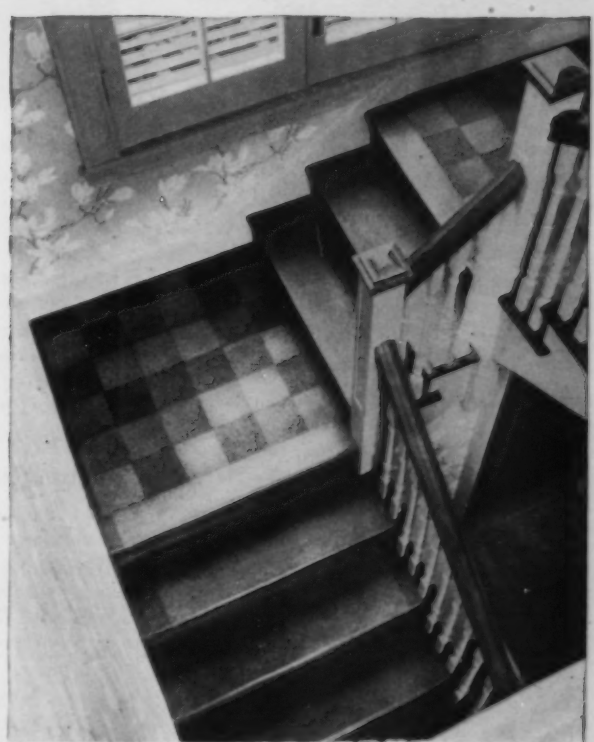
Photo by Rodney McCoy Morgan

LALLY COLUMN COMPANY

Originators, Sole Manufacturers, Genuine Lally Columns

Erie and Albany Sts. Cambridge 39, Mass. | 211 Lombardy St. Brooklyn 22, N. Y. | 733 West 64 St. Chicago 21, Ill.

CORK *is* DURABLE CORK *is* *gracious*



YOU can't beat cork for staircases. You can't beat cork for flooring, whether it's used in a residence, an office, a church, a school, a public building of any kind. Cork is long-lasting, beautiful, warm and quiet. It keeps its resilience for years and years. It's easy to install on metal, concrete or wood, on old or new construction. No other flooring is so easy to maintain; a dry mop keeps it dusted. And these are just *some* of the reasons why progressive architects and contractors recommend Corinco Cork Flooring for many uses. Write our engineering office for specifications, details and layouts.

CORINCO CORK TILE FOR FLOORS & WAINSCOTING CIC

CORK INSULATION CO., INC., 155 EAST 44th STREET, NEW YORK 17, N.Y.

CORK INSULATION CO., INC., 155 EAST 44th ST., NEW YORK AR 9-48

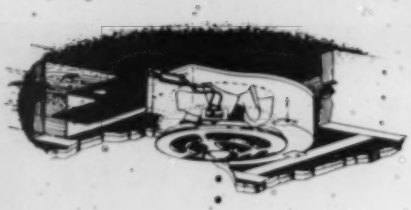
Gentlemen: Please mail me more information about

☐ Cork Tile Flooring ☐ Cork Stair Treads

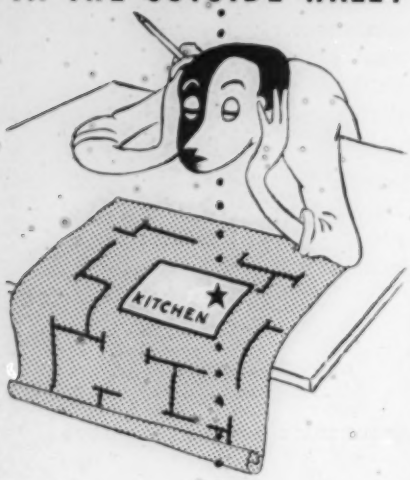
Name_____

Street_____

City_____ Zone____ State_____



WHY LOOK FOR A SPOT IN THE OUTSIDE WALL?



SPECIFY
Blo-Fan
THE ELECTRIC
CEILING VENTILATOR
THAT BUILDS IN
OVER THE RANGE.

Ceiling installation does not interfere with location of windows or cabinets. Blo-Fan fits into any kitchen plan, in any home.

Builds in 3½" depth between standard joists and exhausts thru standard 3½"x10" duct, either through roof or wall.

Blo-Fan
ELECTRIC CEILING VENTILATOR

Stocked in 293 cities covering every section of the United States... Write for your local distributors' names and complete catalog.

PRYNE & CO., INC.
POMONA, CALIFORNIA
Los Angeles · San Francisco · Chicago · New York

ARCHITECTURAL ENGINEERING

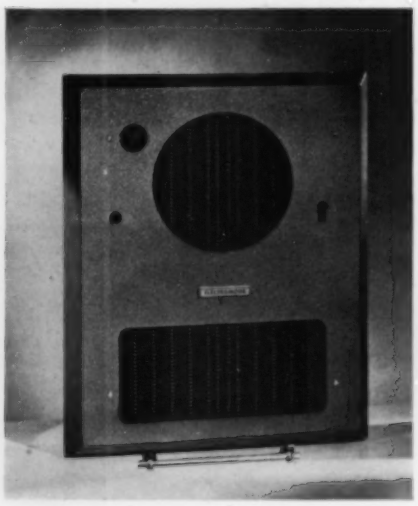
TECHNICAL NEWS AND RESEARCH

(*Continued from page 186*)

box. Finished in white, baked enamel, the heater has these dimensions: front panel, 10 by 14 in. and wall box 3 by 9 by 12⅞ in. Titan Mfg. Co., Inc., Buffalo 2, N. Y.

All-Electric

Electromode all-electric heaters, 1949 line, will feature a new silver-gray finish which is said to blend admirably with any color scheme. Advantages claimed are smoothness for easy cleaning plus a pebbled or hammered finish to give a rich texture.



New line of Electromode portable and wall heaters utilizes pebbled finish

Portable and wall-type heaters are included in the line for homes, stores and offices as well as heavy-duty unit heaters for stores, factories and farms.

All models are fan-circulating, and the heating element is made of cast aluminum. Electromode Corp., 45 Crouch St., Rochester 3, N. Y.

ALUMINUM TILE

Especially suited for use in kitchens, bathrooms and shower stalls is *Altico* aluminum tile, made in individual squares of 4¼ by 4¼ in.

This tile is claimed not to chip, crack, craze or peel. A variety of solid colors and pastel shades is available. Alloy Tile Corp., Newark, N. J.

ERRATUM

Due to a typographical error, the address of the manufacturer of *Ser-Wall* panels, described in the July issue, was incorrectly given. The address should have been: Service Products Div., Woodall Industries Inc., 2035 Calumet Ave., Chicago 16, Ill.

mullions and spandrels by

ALBERENE

U. S. Veterans Administration Bldg., Wilkes-Barre, Pa. Architects: Lacy, Atherton, Wilson & Davis.

Regular grade Alberene's soapstone window mullions and spandrels are financially and esthetically *right* for your job. They're greenish-blue . . . harmonize with any decorative pattern. *And* their price will put a grin on the face of even your most budget-minded client.

For samples and further information, write or phone —

ALBERENE STONE CORPORATION
of VIRGINIA
419-4th Ave., New York 16, N. Y.

WINDMILL FARM

Modern New Home Development

Features Ferro-Therm Steel Insulation for Radiant Heating

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In the lovely countryside near Armonk, Westchester County, N. Y., a 1200-acre residential community is being developed which will comprise about 500 houses — with clubhouse, a beautiful lake, a producing farm, bridle paths, sports areas.

Designed by five leading architects, and developed by Carlo M. Paterno, Windmill Farm combines traditional architecture with the most modern living comforts. An important feature is an electronically-controlled radiant heating system, which maintains heat at a constant 70 degrees — regardless of outside temperature. To assure the efficient functioning of this heating system, the ceilings of each house have an installation of heating coils, wire mesh screen, spun glass, and *Ferro-Therm Steel Insulation*, and walls and attic are also insulated with *Ferro-Therm*.

Ferro-Therm reflects *90–95% of all radiant heat* — insulating efficiency that is needed not only for radiant heating, but to give the most effective temperature control to every type of structure. In addition, Ferro-Therm provides the *plus* advantages of *steel* — it does not absorb moisture . . . it forms an effective fire barrier . . . it maintains lasting efficiency.

Radiant heating, with Ferro-Therm Steel Insulation to give it top efficiency, is being used in modern buildings both residential and industrial — because every structure is a better structure with *reflective steel insulation*. Learn now how the advantages of Ferro-Therm can be applied to *your* plans. Mail the coupon today for full details.

American Flange & Manufacturing Co. Inc.
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New York 20, N. Y.

Please send me, without obligation, complete information on Ferro-Therm Steel Insulation — ☐ commercial; ☐ residential.
I am an ☐ Architect; ☐ Contractor.

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